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Report

THE ECONOMICS OF TELEVISION STATION OPERATION IN 100-PLUS MARKETS

national association
of broadcasters

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- Prepared for -

National Association of Broadcasters

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INTRODUCTION

Television station operation in smaller markets presents special challenges often not recognized in broadcast policy making and analysis. Policy makers often are unfamiliar with operations in smaller markets; and research usually has encompassed all market sizes or focused on the top 100 markets. As a result, inadequate information exists concerning small market television operations for use by managers and policy makers.

One example of the special problems of smaller markets is the lower number of television households per station in these markets, with resulting smaller audiences from which advertising revenues must be derived. In 100-plus markets, the average number of ADI households per commercial station is 47,000 whereas in markets 51 to 100 the average is 90,000 and in the top 50 markets the average is 187,000. Clearly, operations in smaller markets must differ from large market operations to achieve profitable operation on a far smaller economic base.

Operators in 100-plus markets have had to function for many years with cable competition--just now becoming an important factor in most large markets. Stations in markets below 100 also lack exclusivity protection for their syndicated programming, a protection afforded stations in larger markets.

Objective and Tasks

The objective of this study was to determine the factors most important in station operations in 100-plus markets and to identify ways in which 100-plus television operations might be enhanced. In this study, economic, regulatory, managerial and technical factors were analyzed in order to better understand operations in small markets and to identify regulatory and operational changes that could improve the performance of stations in these markets.

Two major tasks were undertaken:

- An econometric analysis of station operations in 100-plus markets to identify the relative importance of the many factors affecting station audience, revenue and profits--e.g., "external" factors such as market size, household

income and number of competing stations, and "internal" factors such as station expenditures for programming and sales, and form of ownership.

- A set of 15 case studies in selected 100-plus markets in which a number of interviews were conducted with station managers, selected community leaders (e.g., mayors, city managers), people knowledgeable about the economics of the area (bankers, planners), major local advertisers and managers of competing media (newspapers, cable systems). The experiences in each market were then analyzed and compared with other markets in order to identify common operating practices and problems and to integrate and generalize across markets.

The combination of case studies and econometric analysis allowed a synthesis of the insights gained from site visits with the quantitative measures derived from formal econometric analysis. Underlying the design of this study was the belief that neither the qualitative assessments of case studies nor the quantitative formulations of econometric analysis could by themselves adequately describe the complex and varied nature of station operations.

Limitations

Time and resource constraints limited the total number of markets that could be studied and the amount of time and effort that could be spent in each market. Therefore, the 15 markets studied do not constitute a sample in a statistical sense, but do provide a view of station operations in a number of differing markets. We have attempted to summarize, as accurately as possible, the nature of station operations in each of the 15 selected markets. However, perceptions of station operations sometimes varied widely among those interviewed in a market. Unavoidably, the review of each market is therefore subject to uncertainty and we accept responsibility for any errors or omissions.

Because the National Association of Broadcasters station economic data base used in the analysis lacked universal coverage, the econometric formulation was not as complete as had been hoped. Access to the more comprehensive FCC data was not obtained during the study. For future policy applications, it would be desirable to extend the analysis by using a more complete set of data.

Confidentiality

No individual station data were withdrawn from the NAB computer tapes. BBC prepared tapes with related market variables, merged these tapes with the NAB data, and from the merged data base conducted the necessary statistical analyses. Complete confidentiality of station data was maintained.

Acknowledgments

This study could not have been performed without the cooperation of station managers and owners in the selected 15 markets. We thank each of them for their time and patience in helping us to understand the trials and rewards of operating a station in a 100-plus market.

Mr. Larry Patrick, Senior Vice President-Research, NAB, and his staff were most helpful in all phases of the study. The NAB 100-Plus Small Market Television Committee's support and original shaping of the project was essential in getting the study initiated.

Case study field work was performed by BBC staff members Jack Pottle, David Leonard and John Penberthy. Dr. Michael Wirth, University of Denver, also assisted in the case study work. Dr. Wirth and James Chavern had primary responsibility for the econometric analysis. Project director was Paul I. Bortz.

SUMMARY

Successful operation of television stations in 100-plus markets is a demanding task. These markets often are subjected to substantial competition from imported signals on cable television, particularly in markets where the cable systems are "grandfathered" in terms of current distant signal importation limits. Overlapping signals from stations in larger markets with greater resources to devote to station operations also provide stiff competition for the station in many 100-plus markets. These competitive factors, combined with a relatively small audience base, require skillful management in all phases of operation to achieve the balance of revenues and expenditures which provides both profit and community satisfaction.

In the following paragraphs, the case study results and economic analysis efforts are briefly summarized, and major findings and conclusions are set forth. Several key regulatory issues and management practices which can have a significant impact on station operation now and in the future are also reviewed.

Case Studies

Figure 1 locates the 15 selected case study areas. Criteria used in selection of the markets included factors such as economic environment (e.g., population and income growth), ownership form, mix of VHF/UHF commercial stations, number of commercial stations, cable penetration and market overlap. Geographic diversity of the group of 15 was also sought.

Analysis of these factors for all 100-plus markets led to the selection of the 15 areas which, in combination, provided substantial variation in each factor (e.g., high and low cable penetration; one, two and three station markets; booming and stable economies). During community visits, information was sought in two major categories:

- factors affecting station performance but not primarily under control of station management (e.g., cable impacts, other regulatory factors, economic/demographic characteristics of the market).

FIGURE 1. LOCATION OF CASE STUDY MARKETS

- factors primarily under control of station management (e.g., programming, sales and advertising production, use of satellites and translators).

Findings from the case studies were developed by analyzing information across all markets. These findings were combined with the economic analysis to develop a number of general recommendations with respect to 100-plus market station operation and regulation.

Economic Analysis

A number of factors can affect the financial viability of station operation in 100-plus markets, ranging from the level of cable penetration to capital investment in the station. In this analysis, 35 separate factors were initially analyzed to determine their effect on station audience, revenues and profits. Fourteen of these factors were found to be particularly important.

A model of station operation in 100-plus markets has been developed using the statistical technique of multiple regression. This technique permits a broad base of financial data to be combined and analyzed in a way that relates fundamental factors, such as audience and revenue, to a number of station and market specific factors, such as cable penetration, programming expenditures and market competition. Complete confidentiality of station specific data was maintained.

The model of station economics can be applied both for policy purposes and for analysis of individual station operations. In Section II and Appendix D, the model is explained and worksheets provided so that station operators can use it to assess alternative station strategies (e.g., an increase in sales efforts) and to compare their operations with the "typical" operation described by the model. The model also can be used when considering the acquisition of a station to compare station performance to what might generally be expected in that market.

A number of case study and econometric results were similar and reinforcing. Full details are presented in Section I and II. Major findings and conclusions are summarized in the following paragraphs.

Factors Affecting Station Performance

A number of factors affecting station performance are beyond direct control of station management. These factors, ranging from the economic base of the market to federal regulation, shape the performance of stations in many ways,

with some having significant impact on the economics of operation; and others a limited effect.

Economic and demographic characteristics of the market. It had been anticipated that economic and demographic characteristics of the market, exclusive of population, would be important determinants of station prosperity. Instead, both the economic analysis and the case studies indicated that these characteristics were not a significant factor in determining station performance. Population growth, per capita income levels, and bank deposit levels and growth were among factors considered. With all other things equal (e.g., number and type of competing stations, TV households and station expenditures), no significant difference was found between station revenues and profits in a rapidly growing, relatively prosperous market versus a market with stable population and relatively modest per capita income levels.

Cable penetration. The economic analysis determined that increasing cable penetration has a negative impact on audience, revenues and profitability of stations. Earlier studies did not find as strong an impact. However, our analysis included only 100-plus markets which might account for at least part of the difference. Case studies also suggested this, but the economic confirmation is of most importance.

For the model developed using 1979 data, a one percent increase in cable penetration results in a 0.07 percent decrease in station average quarter hour audience. In the baseline example presented in Section II, a VHF station in a three station market (two V's, one U) with a cable penetration of 40 percent is estimated to draw an average quarter hour audience of 20,500. If cable penetration had been 70 percent (with all other factors held constant), the equation for 1979 would estimate that average quarter hour audience would decline to 19,700 with an estimated decline in profitability of 10 percent.

Cable regulation. Distant signal importation and syndicated exclusivity were cable regulatory issues most often mentioned by those interviewed as a part of the case studies. Substantial increases in viewing loss to cable are anticipated by station management if distant signal importation limits are lifted. Information developed in this study is not sufficient to answer this question. However, several markets (e.g., Rapid City, El Centro/Yuma) were investigated in which the cable systems had been "grandfathered" (i.e., the distant signal limits do not apply) and it appeared that losses to cable were higher than experienced by stations where a more limited set of signals were

imported. An analysis of viewing in cable homes in markets with grandfathered cable systems structured to compare viewing in similar markets but with limited signal importation would help to resolve the issue of impacts resulting from any modification of current rules.

Syndicated exclusivity protection does not apply in 100-plus markets. The inequities of lack of protection were raised repeatedly during case study field visits. In one market, which also had a "grandfathered" cable system, it was stated that "MASH" was available on four channels in the market. The compromise which led to no syndicated exclusivity protection for 100-plus markets appears to reflect greater concern for program syndicators who derive most of their income in larger markets, and for cable operators, than for the impact on 100-plus station operators.

Expenses for syndicated programming ranged in the case studies from $50,000 to $200,000 per year, generally increasing with market size. On a per ADI TV household basis, this expense is approximately $1 per year per household. As detailed in Section I, this figure--the cost of syndicated programming for one station--is approximately what a cable operator in the same market would pay per cable subscriber for all imported broadcast programming (an average of five to six stations for the 10 case study markets for which data were available). On the basis of total programming costs, a station operator spends approximately four times as much for programming one channel on a per ADI TV household basis as the cable operator spends on a per subscriber basis for all imported broadcast stations. Another way to look at the cable compulsory licensing expense is that the cable operator in the markets studied pays approximately the same amount for five to six imported broadcast stations as it would pay for one "10 cents per month" satellite delivered non-broadcast program service.

Other regulatory factors. Other regulatory factors did not appear to have a major effect on station profitability. The impact was more in the consumption of top management time (estimated at 10 to 25 percent) and burdensome paperwork requirements, most specifically for Equal Employment Opportunity (EEO) and program logs. Postcard renewal was not viewed as particularly effective because all the related record keeping still is required. Financial reporting often was questioned, with a number of station operators doubting that there is any reasonable basis on which to require reporting at all.

The "UHF handicap". The econometric analysis, consistent with earlier studies, confirmed that--with all other things equal--the UHF station in

general obtains lower audience, revenues and profits. In the baseline case presented in Section II, a UHF station would be expected to draw a 26 percent lower audience and have 17 percent lower revenues than a similarly situated VHF station. One exception to this was found in the case studies and is described later in this report.

Factors Controlled Primarily By Management

In addition to the factors just described, financial strength, capability and initiative have a major impact on station success. In a market with two or three stations, it was not uncommon to find one or two doing very well and another, equal in all other respects (e.g., a VHF in an all-VHF market), performing poorly. Management factors often played an important role in differentiating station performance.

Section II describes a conceptual model of station operation. In that model, it is postulated that stations are operating in one of four modes:

(1) Region 1--Non-competitive: Often a poor third in a three station market; little invested in syndicated programming, news operations, ad production etc; small, poorly trained sales force; sometimes poor signal quality.

(2) Region 2--Investing to Compete: A turnaround or catch up situation where major increases in expenditures for programming, sales and equipment have not yet shown up in increased audiences and revenues.

(3) Typical Operator: A competitive station, little selling off the rate card, a good community image and a satisfactory--even optimal--balance between revenues and expenses.

(4) Chasing the Rainbow: Attempting to garner a disproportionately large share of market resulting in decreased profitability.

In 100-plus markets, most stations studied were in the third category. Some stations in the first two categories were observed. The fourth category is more likely to occur in a larger market, or even in competition among the

networks. Focusing on the first three categories, what is the relative importance of factors under management control?

Technical. Most 100-plus stations are operating close to the profit-maximizing level of technical expenditures. In the baseline case presented in Section II, an increase (decrease) in technical expenditures results in almost no change in profits. It is, however, important to maintain good signal quality and factors such as tower location and height can be important in determining market rank. Technical "goldplating" does not pay off, according to the model.

Programming. Both the case studies and the econometric analysis determined the major importance of programming. Investment in top-ranked syndicated programming, good local news and other locally originated programming were hallmarks of the successful station. The model indicates that a one percent increase in program expenditures would typically provide a 0.6 percent increase in audience (assuming all other factors the same). It should also be assumed that expenditures by other stations in the market remain constant--a factor not currently in the model because of data limitations. The impact on audience is the largest of all other factors in the audience equation. In the baseline case, a 25 percent increase in program expenditures would increase profits by seven percent.

Sales. The economic model identified the sales area as the one in which the most profit potential exists. Case study work confirmed that sales efforts were a crucial factor in successful station operation. Section I reports on successful sales techniques and identifies needs for sales training and materials.

One key element is the provision of good advertising production capabilities. Television can be a powerful sales tool. In the markets studied, it was not unusual to find advertisers not using a particular station because of poor advertising production capability and, if no station in the market had the production skills, some advertisers simply did not use television. In contrast, good production capability, particularly when combined with creative skills, draws advertisers to the station.

Sales expenses provided the greatest impact on profitability in the economic model. A one percent increase in sales expenses (assuming these dollars are spent as effectively as the typical station) provides a 0.32 percent increase in revenues. In the baseline case, a 25 percent increase in selling expense is estimated to increase profits by 19 percent.

General and administrative expenses. The case studies did not identify much about the impact of general and administrative (G&A) expenses on profitability. Certainly skilled management and efficient administration are essential elements of successful operations. However, using G & A expenses as the measure, it appears that this is an area where stations might successfully economize. Reducing G & A expense does reduce revenues slightly but the reduction in expense more than offsets the drop in revenue. In the baseline case, a 25 percent reduction in G & A expense increased profitability by 17 percent.

Personnel. A major problem in 100-plus markets is the retention of good personnel. The successful on-air person often moves on to larger markets. This is particularly true with talented minority employees. Some stations have had more success in retaining talented staff by increasing pay and seeking people with an established commitment to the community. Economizing with respect to staff does not appear to represent a good business strategy.

Satellite stations and translators. Stations with satellite operations typically were successful operations. Most licensees of satellite operations acknowledged their importance in establishing market rank and in holding or expanding ADI boundaries in competition with other markets. The satellite operations themselves, on the basis of typical accounting practices, appeared to be of marginal profitability. However, the accounting practices might be a factor in this. Most satellite operations had a number of costs of the total operation allocated to them, e.g., for sales, news and general and administrative expenses. If satellite stations were assessed only incremental costs--i.e., only those costs incurred directly and specifically because of the satellite operation--it is likely that they would report more profits. Only one situation was discovered in the case studies where closure of satellite operations was being considered. In that case, non-duplication protection on cable from neighboring large market stations had recently been lost under the "significantly viewed" cable rule. As a result, the satellite stations' viewing audience dropped sharply. Station management should look at satellite stations more carefully. Using more sensitive cost accounting procedures, such as incremental costing, will help to better assess the feasibility of this strategy for achieving increased audience, revenues, and profits.

Overall, the use of translators is generally accepted and proposed liberalization of translator rules should stimulate further use. The only objection to translators was that the increasing use of public funds for translator

operation was an undesirable intrusion of government into the private marketplace. It would seem, however, that where such operations result from a public vote, such as in the establishment of special districts in certain states, the households are moving to augment a perceived lack of adequate television service.

Ownership. The econometric analysis determined that ownership had no significant effect on station economic performance. Case study work verified this. The form of ownership also is not important. The quality of ownership, however, is important. Positive and negative effects of group and individual ownership were observed in a variety of market situations. In some cases, group ownership appeared to be helpful--for example in rebuilding a weak station in a three station market. In other cases local ownership appeared to be a factor in strong community programming and advertiser support. No generalizations are possible--the "best" form of ownership is a function of many station-specific factors.

The following sections discuss each of the foregoing topics and related factors in more detail. It is hoped that a thorough reading of this report will help in future policy efforts in improving the operations of stations in 100-plus markets.

SECTION I. CASE STUDIES OF 100-PLUS TELEVISION MARKETS

Little specific attention has been paid to the special problems and concerns of television stations in markets below the top 100. In addition to the econometric work described in Section II, 15 markets were visited and station operations in those markets analyzed. The case study approach was selected so that: 1) important factors affecting operation not amenable to quantification could be identified and 2) the on-site knowledge of station operations could help shape the econometric formulations.

Selection of Markets for Case Studies

All ARB markets from 101 to 212 were reviewed and categorized as the first step in selection of the fifteen to be analyzed. The factors considered are listed in Table 1 and the actual values are in Table A-1, Appendix A.

Using these characteristics and two other factors (geographic and market size spread), selection of the markets to be studied was made in consultation with NAB staff members. Given the large number of parameters of interest, this group of fifteen does not constitute a sample in any statistical sense. However, it does provide a representative selection of varied small market situations.

The markets selected for case study are listed in Table 2.

Case Study Approach

Station management in the markets selected were notified of the study by letter from the NAB and their cooperation was solicited. The letters were followed by telephone calls from BBC staff and in all cases at least limited cooperation was promised. (In some instances, station owners/managers would not provide access to financial information.)

In addition to station management, interviews were set up with selected community leaders (e.g., mayor, city manager), people knowledgeable about the economics of the area (bankers, planners), major local advertisers, and managers of competing media (newspapers, cable systems). The interview guides used are presented in Appendix B. The guides were used to provide informal

TABLE 1. MARKET CHARACTERISTICS USED IN SELECTION OF AREAS FOR CASE STUDIES

Economic Environment*
Population growth index
Per capita income growth
Bank deposit growth index
Ownership
Group
Local
Mix of VHF/UHF commercial stations
Number of commercial stations
Population density
Cable penetration
Market overlap (ADI to total survey ratio)
Unused allocations
Single or multi-state market

*Growth indices were related to national growth rates (period: 1970 to 1978). A scale of 1 to 4 was used as follows: (1) declining; (2) stable; (3) moderate growth; (4) rapid growth. See Appendix A for details.

TABLE 2. MARKETS SELECTED FOR CASE STUDY

	Market Number**
Three Station Markets*	
Madison, Wisconsin	102
Yakima, Washington	127
Lubbock, Texas	133
Traverse City/Cadillac, Michigan	135
Bangor, Maine	148
Idaho Falls/Pocatello, Idaho	157
Two Station Markets	
Wheeling/Steubenville	117
Wilmington, North Carolina	131
Macon, Georgia	137
Rapid City, South Dakota	162
El Centro/Yuma	181
Grand Junction (became 2 stations, October 1979)	187
One Station Markets	
Anniston, Alabama	189
Jackson, Tennessee	191
Lima, Ohio	193

*Number of commercial stations.

**ADI Market Rankings 1980-81, The Arbitron Company.

structuring of interviews. Discussions often ranged beyond the limits of the guide. Separate guides were used for station management, community leaders and advertisers, and cable system managers.

Prior to visiting each area, general information available about the market and television operations in the area was gathered. Duration of site visits was dependent upon the number of stations in the market and typically varied from one to three days.

Summary descriptions of the markets and station operations are presented in Appendix C. Much of the information developed in the case studies is confidential on an individual station basis. In the following sections, anecdotal references and aggregated conclusions are presented that are helpful in understanding small market operations. Where confidentiality is involved, identity of the specific market or station is withheld.

In the following paragraphs, results of the major areas of inquiry are presented. Organization of the section is by two major categories:

(1) Factors primarily under control of station management
   - technical
   - programming, syndicated and local affairs
   - news
   - sales and advertising production
   - personnel
   - use of satellites/translators
   - ownership

(2) Factors affecting station performance but not primarily under control of station management
   - economic/demographic characteristics of the market
   - cable impacts
   - rating issues
   - regulation
   - community role and competing media

Factors Controlled Primarily by Management

There often is substantial variation among stations in a market with respect to factors such as investment in equipment, signal quality, sales techniques and programming. In the case studies it was found that the adequacy of station operations in each of these areas was important to overall station success or profitability. Relative importance of the factors is assessed in the following paragraphs.

Technical. Stations operating with old, or low quality, often unreliable equipment (e.g. transmitters, towers, cameras) were not often found in the case studies. Typically a station operating in such a way was doing so because management consciously decided not to invest. Reasons for this included:

- reluctance to invest due to uncertainty with respect to renewal or transfer of a license
- an emphasis on short-term profits, sometimes imposed by an absentee owner
- an operation undercapitalized from the start.

Such stations often were last in the market and because the poor performance was so obvious to everyone in the community (including bankers), loans for capital improvements were not easily obtained. Often, license transfer is the impetus for major overhaul, with capital provided from outside the community.

Occasionally a station is at a major disadvantage because of tower location and height. In one market, moving to another more desirable tower location seemed to be precluded primarily because the group owner had a station in a neighboring market. In Wilmington, although WECT is successfully using a very tall (nearly 2,000 ft) tower located 40 miles inland, WWAY has been stymied in its attempts to move its location west and increase height because of possible interference with stations in nearby Charlotte. This puts WWAY at a competitive disadvantage, but management of WECT appeared to support the proposed move so that the ADI boundaries will be more secure.

Rather surprising was the number of stations complaining of poor network microwave feed. Jackson, Rapid City, Traverse City/ Cadillac and Lubbock all had at least one station with such a problem. Network feeds via satellite to some of these markets might be a solution.

Top stations in a market tended to be the technical innovators. Granted that being on top of the market provides more capital for investment, it still appears that technical quality is strongly correlated with superior performance in programming, sales and overall management. In Bangor, new management at WVII, long a poor third in the market, started with upgrading technical performance, with subsequent concentration on programming and sales. The new owner believes that without a reliable, good quality signal, investments in programming and other areas will not be as beneficial.

It appears that a good level of technical performance is required. "Gold-plating," on the other hand, does not appear to be important. A station that pays attention to sound technical performance will, all other things equal, be in a position to compete even without the very latest in equipment.

The problem of obtaining qualified technical personnel was cited, but only rarely. Management willing to pay adequately for technical staff should be able to reliably operate today's equipment.

Programming. Investment in programming, both syndicated and local, seems to be one of the most effective ways for a station to increase overall performance. Results of the econometric analysis substantiated this finding.

Strong syndicated programming particularly builds audiences that pay off in sales. Expenditures for syndicated programming varied from a low of about $50,000 per year in some of the smaller markets to over $200,000 per year in markets near 100. Escalation in the cost of syndicated programming was often expressed as a concern. (Lack of syndicated exclusivity is perceived as a problem in these markets--this is discussed in the section on cable impacts.)

Local public affairs programming was seen by most managers as a necessity but few were enthusiastic about it, mainly because of relatively high production costs and low audiences. The general belief is that people watch television to be entertained and that to produce high quality, entertaining local affairs programming is too costly. "Talking head" shows, which often are produced, are much less expensive--and less entertaining.

Program sharing, such as through a PM magazine operation, is seen as one way to improve local programming. The challenge is to find a way to develop entertaining local programming at reasonable costs. Regional satellite networks, increasing use of tape at the stations, and improved equipment for remote coverage are seen as promising, but "not here yet" for most small market operations.

Editorializing is an area in which there was little agreement on role. WABI, Bangor, editorializes over 100 times per year. Another station in a market of comparable size recalled that its last editorial was in 1977. Not infrequently, the reason given for limited editorializing was "this is a small community and, unlike a large market, things can be taken personally."

Editorializing seems to be more tied to management's perception of its strength in the community than other factors. Management well established in a community, active in local affairs, tended to editorialize more. Group-owned

stations where the group was not locally based and the management were relative newcomers to a community tended to editorialize less, being more uncertain of possible community reaction.

News. News operations are the most visible local role of a station. In market after market, the problem of retaining good news personnel came up. The higher pay and greater prominence associated with larger markets is a continual lure for talented on-air people.

Some stations have stabilized news staffs at a high level of quality:

- Improved salary scales is one approach, when management recognizes the importance of the news operation to overall station performance. KAMC-Lubbock, with much higher than average salary scales, has a relatively stable news team, and KIFI-Idaho Falls has found this to be effective.

- Seeking qualified staff with strong local roots is another approach. KID-Idaho Falls and KECC-El Centro have stressed this.

Economizing on news does not appear to be a good business strategy. In one market in which there is significant cable penetration (providing viewers several non-local news choices) one station responded with ENG equipment, vans and live remote. The other operates almost totally in the studio and the 10 o'clock news often is a tape of the 6 o'clock news. Result: A 25 to 30 share for the aggressive operation and less than a 10 share for the other, with cable imported signals getting most of the rest of the audience.

Quality of news operations was most often cited by community leaders and advertisers as their primary measure of a station's performance. (Community affairs programming was viewed as much less important.) Investment in news programming based on case studies and the economic analysis is a crucial factor in station success.

Some stations in two city or two state markets face a different problem of whether to regionalize or localize news. The Wheeling/Steubenville market is a good example--two states, two cities and a nearby major market (Pittsburgh). WTRF-Wheeling recognized the shift in population from Wheeling to suburban areas and the southern part of the ADI. It regionalized its news approach and gets approximately a 50 share for its news.

WTOV-Steubenville was recently purchased by Ziff-Davis. With news shares around 20, the new management planned to open a news studio in Wheeling

and had doubled the news staff. This type of decision--to invest aggressively--is the approach to improve a station's position that both the economic model and case study work suggest is most effective.

Sales. The overall impression of BBC staff members who prepared the case studies was that the quality of sales force varied widely among stations and was directly reflected in revenue success. This was substantiated in the econometric modeling effort.

Problems observed were:

- Few stations provided much training to sales people; it was often sink or swim. (It was only at stations where sales organization was weak that much concern was expressed about "the economy." The better the sales operation, the less sensitive to the local economy revenue performance seemed to be.)

- Surprisingly, some of the dominant stations were accused of an arrogant, take it or leave it attitude with advertisers, resulting in a shift to newspapers and radio by advertisers if there was not a strong, alternative television outlet.

- Ad production capability at some stations is so poor that advertisers said they were "embarrassed" to see their company's ad on the air. (This is in contrast to one advertiser who is so proud of his personal television appearances he keeps his TV set on in the office to watch--and he advertises more than 100 times per month.)

Conversely, sales operations at some stations are much more professional. Stations concerned with sales often use materials from TVB, but believe that more support from TVB targeted specifically for small markets is needed. Stations in Madison, Yuma, Yakima, Macon, Pocatello/Idaho Falls and Anniston all reported using TVB.

Techniques used by successful sales operations included:

- Top quality production facilities, but no "giving away" of production, i.e., production is a profit center. The production centers that charged no fee or only a nominal one tended to be of lower quality.

- Special training for salesmen approaching the regional shopping malls that are being built in all the markets; cooperative advertising is a form particularly useful in malls and requires special knowledge on the part of the salesman (WGTV-Traverse City has a co-op specialist).

- Incentives for seeking out new business (one station takes old and regular accounts away from the sales force after they have "aged" providing a small base salary rather than commission in recognition of the business; another approach is much higher commission on new business).

- The big newspaper advertiser not using television is targeted by aggressive sales forces for special effort.

- Sales seminars held for potential advertisers.

- For potential advertisers who have shown reasonable interest, a well-done "spec" spot.

Professionalism in sales ranks with improved news operations as the most important areas for station management to address--and in the econometric analysis, sales is the most productive investment in terms of increased revenue and profit.

The area of ad production merits special emphasis. Television can be an immensely effective medium for advertising. Yet too many stations quickly reduce that critical advantage over other media by poor production capability--sometimes no more than display boards and talking heads.

Many advertisers interviewed said they wished that more creative assistance was available. In the smallest markets, this might be difficult, but it is possible that regional ad cooperatives, spreading equipment and creative costs across a large base, might be helpful.

With the right equipment and staff, business can build up quickly. KJCI-Grand Junction, after only one year on the air, was capturing a major share of the ad production business in the market. Stations cited by advertisers as having superior production capability were KAMC-Lubbock, WKOW-Madison, KID-Pocatello, WTRF-Wheeling, WWAY-Wilmington and KIMA-Pocatello. Four markets were cited as totally lacking good ad production capability. In other markets, advertiser evaluations were mixed, but generally both creative and production skills left something to be desired.

Personnel. The most often cited problem by small market stations was retaining good people. Many of the on-air people on the stations had just graduated from school. The youth and inexperience of on-air staff was cited frequently by community leaders in criticizing local programming. The practice was explained by station managers as a necessity given what they could afford to pay. Similar but less critical staffing problems were described by management in areas of sales, technical and management operations.

Some stations, however, have minimized this problem:

- Pay scales with enough flexibility to especially reward the very talented staff member can in the long run be an attractive investment. (In at least two markets, one station indicated ease in keeping good people and another said turnover was high. As one might guess, the pay scale at the first station was much higher than at the second--and news ratings also were higher at the first station. In one market, staff was hired from the local university at $3.25 per hour and turnover was high. Another station in the same market had much higher salary scales and an excellent retirement plan. At that station 75 percent of department heads in 1980 had been there since 1968.)

- Seeking individuals with strong ties to the community, even if that requires added investment in training, can be an effective tactic. Not only does that provide a more stable work force, but such an individual is perceived by the community as more knowledgeable and concerned about community affairs. KECC-El Centro and KID-Pocatello have had success with this approach.

The "training ground for larger markets" problem is intensified in the area of minority hiring. Larger market stations striving to meet EEO requirements often provide a ready market for minority individuals with smaller market experience. There does not seem to be an answer to this other than the two approaches just suggested.

Use of satellites and translators. Extension of market coverage by the use of satellites and translators not only varied by market but by stations within a market.

It was not possible to obtain a good measure of the profitability of satellite operations. Each station had a different approach to allocating costs to the satellite operation. Satellite operations more frequently were assigned on a fully allocated basis rather than on the basis of incremental costs. Using the latter technique might be more realistic and it would tend to show satellite operations as being more profitable than most statements now indicate.

Generally, satellite operations with fully or almost fully allocated costs show little profit or loss, but stations with satellites are often the dominant station in the market--and that positioning is viewed as important in itself.

An example of a benefit not apparent on the satellite operation's income statement is establishment of a larger ADI than would otherwise be pos-

sible with consequent advantages in spot sales, compensation, etc. KOTA-Rapid City operates two S-1 satellites (Lead, South Dakota and Sheridan, Wyoming) and one S-2 satellite (Hay Springs, Nebraska) plus a number of translators. (KEVN-Rapid City also operates a satellite in Lead-Deadwood.)

KOTA's aggressive use of satellites has resulted in a very large, multi-state ADI. Although the grade B contour of the primary stations in Rapid City covers all or part of only seven counties, the ADI encompasses 24 counties, and KOTA had a net weekly circulation of 50 percent or more in 36 counties in 1980. KEVN, less aggressive to date than KOTA in satellite/translator use, had net weekly circulation of 50 percent or more in 17 counties. (The large ADI has been achieved in the face of competition from the Billings, Cheyenne, Casper and Minot-Bismarck-Dickinson markets.)

Allocation of revenues to the satellites is difficult, but KOTA management believes they are an important element in its operation.

KREX-Grand Junction is another aggressive user of satellites and translators. It operates satellites in Montrose and Durango and 54 translators. Management's assessment is that although the satellites lose money on an accounting basis, they are valuable overall through scale advantages in selling.

All three stations in the Traverse City/Cadillac market operate S-1 satellites. Their evaluation is identical--not profitable on the books, but overall a good investment.

In some markets, there appears to be a reluctance to use satellites or translators because it might encourage stations in neighboring markets to counter with similar moves--an escalation of expense that some station management views as unproductive.

In the Yakima market, all three stations (KIMA, KNDO, KAPP) operate satellites. All three have lost non-duplication protection in the satellite areas of operation due to the "significantly viewed" rules for cable. Station management believes this has hurt the satellite operations and there has been some consideration of ceasing satellite operations because of this.

Translators, with much lower costs of operation and smaller service areas, are a less controversial way of extending signal coverage and many of the stations were carried on a number of translators.

In the Grand Junction market, concern was expressed over a county-financed translator network. In November 1978 Mesa County voters approved a mill levy to finance a translator network to bring in Denver stations. (Funding has

been sought from National Telecommunications and Information Administration (NTIA) for bringing in a public broadcasting station.) The system was opposed by KREX, United Cable TV and others who questioned the role of a government body competing with private enterprise. The stations to be brought in are KOA (NBC), KWGN (independent) and KRMA (PBS)--ABC and CBS programming is available from the local stations (KREX also carries some NBC programming). Colorado is one of a number of states that now permit such financing by the county or special districts.

Overall, the use of translators is generally accepted and proposed liberalization of translator rules should stimulate this use. Satellites, in contrast, are viewed by many as uncertain ventures. Much of this uncertainty appears to be based on a formal accounting viewpoint. Station management should look at satellites more carefully, using more sensitive cost accounting procedures such as incremental costing, in assessing the feasibility of satellites.

Ownership. Effects of ownership did not appear to vary in any predictable way. The quality rather than the form of ownership was more important in determining the effect on station performance in the stations studied.

Positive effects of group ownership included provision of greater financial and technical resources to a station weak in its market. As noted earlier, a struggling station might have difficulty borrowing funds locally because its problems are so apparent to everyone in the community. A group owner can provide capital from outside.

However, group ownership can have a negative effect. A group owner with stations in neighboring markets might restrict the aggressiveness of management in what is viewed as the secondary station so as to limit competition for its flagship operation.

With respect to involvement in community affairs, both positive and negative effects of group ownership were observed. In one case, the group's lack of interest in local affairs was reflected through the manager and the station was viewed by the community as not being concerned about community affairs. In other cases, group owners seemed to be less concerned about personal social repercussions in taking a controversial stand.

Possible economies of operation in a group appeared at times to be offset by large general and administrative charges to the station. In the small markets studied, no evidence was found of buying power economies.

Similarly, individual and local ownership was neither all positive or negative. In one market, individual resident ownership appears to be helping the

station, in contrast to the prior ownership (a group of investors) from a large city hundreds of miles away. But the individual, although living in the market, moved to the market when he bought the station, and still is viewed as an "outsider" by many in the community.

In Anniston, a very small market, a current issue is crossownership. The station owner also owns the newspaper and AM and FM stations in the town. The FCC has ordered divestiture. Although assigned an ADI, Anniston does not have a DMA and is midway between the Birmingham and Atlanta markets. The hilly terrain makes it difficult to receive this UHF's signal. With the station achieving only a 20 share, it is questionable whether anyone other than current ownership could afford to operate the station.

The econometric work seems to confirm the case study findings--the form of ownership alone is insignificant overall in determining station performance. The "best" form of ownership is a function of many station-specific factors.

Other Factors Affecting Station Performance

The preceding section focused on factors which primarily are affected by station management. A number of other factors affect station performance which are beyond direct control of station management.

Economic and demographic characteristics of the market. When the study was initiated it was assumed that factors such as economic and population growth rates would be important in determining station performance. The case study effort consequently analyzed the economic base and performance of the market in some detail.

Although economic and demographic factors had some impact on station operations, it was found that the impact was not major when compared to other factors. This later was substantiated in the econometric analysis.

Markets in the case studies ranged from those with little or no population and economic growth in the 1970's to those which could be characterized as boom areas. Population, per capita income and bank deposit growth were ranked on a scale of 1 to 4, using overall U.S. growth rate as a base (see Appendix A). Retail sales also were initially included but were dropped in favor of per capita income.

Markets varied across the different measures:

- Some markets have had moderate to rapid growth in all three categories (Grand Junction, Jackson, Wilmington, Rapid City, Idaho Falls/Pocatello, Traverse City/Cadillac, Yakima, Madison). "Sunbelt" and energy stimuli were common in many of these markets. Rapid City was anomalous in that much of the economic growth was related to rebuilding from the disastrous flood of 1972, and has since moderated.

- Other markets showed stable to moderate growth patterns (Bangor, Macon, Lubbock, Wheeling/Steubenville, Anniston).

- Two markets displayed an unusual mix:

  - El Centro/Yuma has had rapid population growth, less than average per capita income growth and average bank deposit growth, reflecting both the agricultural nature of the economic base, and the large number of retired persons moving to the area.

  - Lima experienced declining population but the heavy industrial base maintained a moderate growth level in per capita income and bank deposits.

No markets were studied which had only declining to stable rankings in all three categories. Only three markets in the 100-plus category, all in the Northeast, ranked no better than stable in all three categories.

Certain special market situations do affect station operations. In Lubbock, with 13 percent Hispanic population, Spanish-language UHF's have twice been established and failed. The existing stations concentrate some programming on the Spanish speaking market.

Seasonal variations in population directly affect ad sales in Traverse City/Cadillac. Population influx from larger metropolitan areas to Grand Junction has increased the demand for better television service. Madison stations, with a large university community and the state capital, have found a higher than average demand for high-quality news and information programming.

Development of regional malls in several of the markets has stimulated the growth of more retail advertising, and as discussed earlier, increased the need for well-trained sales personnel. Traditional sales approaches used in now-declining central city shopping areas have to be modified.

The relative decline in importance of traditional industry in Wheeling/Steubenville and a more broadly based regional growth are changing programming and sales activity in that market.

One station indicated a short-term "benefit" from a sharp increase in blue-collar unemployment--an increase in advertising for "going-out-of-business" sales. This rather sanguine view probably was possible because underlying growth in the area will offset the decline in the traditional economic base.

All of this suggests that stations that perceive and adapt to economic change most rapidly can continue to prosper. Stations which are not sensitive to changes in their markets are the ones that are convinced that "externalities" are at the root of their problems.

Cable impacts. Cable penetration (1979) in the markets studied ranged from 63 percent in El Centro/Yuma and 66 percent in Lima to 16 percent in Bangor. Concern about cable impact focused on two predominant factors:

- the degree of cable penetration
- the relative importance of nearby regional large markets

The latter factor is closely related to the proposed dropping of distant signal importation limits. For example, unlimited importation of Boston signals to Maine, Salt Lake stations to Idaho or Atlanta stations to Alabama is viewed with concern, even with simultaneous non-duplication protection.

Of even greater concern is distant signal importation across time zones (easy to do by satellite and already common in the Mountain Time Zone) which has the effect of negating the network simultaneous non-duplication rules. Examples could be New York stations to Texas or Chicago stations to Pennsylvania.

Investigation of news share for local stations in a grandfathered cable market (i.e., one in which regional stations already are brought in in large numbers) is warranted. Rapid City is a market where this is the case. Because current cable penetration is only 16 percent market-wide, total impact is not now large. But a survey of viewing in cable homes in the market would allow extrapolation to a more intensely cabled situation. It is believed that cable homes often watch Denver rather than Rapid City news.

Syndicated exclusivity, a protection not now granted to 100-plus markets, came up repeatedly. With the growth of 20-plus channel cable systems and satellite distribution, small market operators believe that whatever merit lack of protection in small markets might have had is now gone. (The syndicated program exclusivity rule adopted in 1972 provides no protection in 100-plus markets. It was adopted pursuant to a compromise agreed to by broadcast, cable and program production industries. The compromise reflected greater concern for

impact on program syndicators who derived most of their income in larger markets and cable operators than the impact on 100-plus station operators.)

Some comparative figures are informative. As noted earlier, 100-plus market operators typically spend $50,000 to $200,000 per year for syndicated programming. In addition to this, of course, are expenditures for news and other locally originated programming. Based on the NAB financial survey (1979), total program expense ranged from $713,000 typical of stations in ARB markets 101 to 125 to $274,000 in markets 176 and smaller.

In ADI TV markets 101-125, total ADI TV households are in the 140,000 to 180,00 range. The per station total program expense per household therefore is $4 to $5, and per market values would be two to three times this figure.

In markets 176 and below, total ADI TV households are 55,000 and below, resulting in a per household average program expenditure of approximately $5 or more per station.

Examining the copyright tribunal fees paid by cable systems in markets studied yields the figures in Table 3. (Systems not required to pay fees or for which data are incomplete are not listed.) The unweighted average copyright payment for systems in the 17 communities listed is $1.21 per subscriber, or 10 cents per month per subscriber. Cable systems such as in El Centro and Yuma with above average fees are bringing in a large number of distant signals (e.g., seven or eight).

This brief examination suggests that typical cable system program expenditures for broadcast programs, on a per subscriber basis, are approximately a factor of four below per household program costs incurred by a single station and nearly an order of magnitude below expenditures by stations in a two station market. Syndicated programming alone runs about $1 per household per station, roughly what cable systems pay on a comparable basis, per subscriber, for all broadcast programming (ranging from three to eight imported signals for the communities listed).

Another point of comparison is what cable operators are willing to pay for other satellite delivered non-broadcast programming. Five cents to twenty cents per month ($.60 to $2.40 per year) per channel is typical. Therefore, when not covered by compulsory licensing, a single channel of programming is valued by the cable operator at approximately the amount paid for all broadcast channels received under compulsory licensing.

TABLE 3. COPYRIGHT FEES--1979

Market	Franchise Area	Number of Distant Signals 1979	Subscribers*	Fees 12 months ($)	Annual Fees Per Subscriber
Grand Junction	Grand Junction Fruita Palisade Mesa City	6	16,368	$19,928	$1.22
Lima	Lima Elida	5	19,170	16,738	0.87
Jackson	Jackson Madison County	4	11,236	6,171	0.55
Anniston**	Anniston Hobson City Oxford Weaver Calhoun County Ft. McClellan	6	18,073	24,484**	1.35
Rapid City	Rapid City Ellsworth AFB Pennington City	5	8,972	9,194	1.02
Yakima		Less than 1,500 subscribers			
Wilmington		No Filing			
Macon	Macon, Bibb County Payne City, Jones County	5	25,334	33,305	1.31
El Centro**	El Centro, Brawly Calexico, Holtville, Imperial, Westmoreland, Imperial County	7	15,614	33,518 (est.)**	2.15
Yuma	Winterhaven CA Yuma	8	13,532	35,984 (est.)**	2.66
Wheeling**	Wheeling, Benwood, Bethlehem, Clearview, Triadelphia, Valley Grove	3	13,551	11,040 (est.)**	0.81
Steubenville	Steubenville	3	6,299	3,282	0.52
Idaho Falls**	Idaho Falls, Ammon City, Bonneville County	6	8,088	8,576 (est.)**	1.06
Pocatello	Pocatello, Bannock County, Chukbook Inkom	5	10,788	11,336	1.05
Traverse City**	Traverse City	6	7,249	6,338**	0.87
Cadillac	Cadillac	7	2,993	2,108	0.70
Madison	Madison, Middleton, Blooming Grove, Shorewood Hills, Maple Bluff, Burke	5	24,122	29,590	1.23
Bangor**	Bangor, Brewer, Old Town	8	7,724	15,726**	2.04
Lubbock		5	14,380	16,827	1.17

*Average of first and second six month period of 1979.

**Six month data only; multiplied by 2 to estimate annual figures.

Source: National Association of Broadcasters obtained the base data from Copyright Royalty Tribunal records.

It appears that, at least in small markets, copyright fees (to carry three to eight distant signals) are inconsistent with what a single station spends on a comparable basis by about a factor of four and often are below what the cable operator is willing to pay for a single channel of satellite-delivered non-broadcast programming.

Other regulatory impacts. No new or surprising impacts were identified in other regulatory areas. Too much paper work, unnecessary record keeping, and the associated drain on management time that seem to characterize most regulated industries also plague the small market operator. Some specific findings are:

- Ten to 25 percent of station top management time is spent on regulatory matters.
- Legal fees, exclusive of license renewal or transfer efforts, generally ranged from $10,000 to $25,000 per year.
- Ascertainment is typically viewed as unnecessary particularly in a small market. Cooperative ascertainment efforts in a market are a good way to reduce the burden. A few station managers viewed ascertainment positively as a way to minimize "frivolous" complaints to the FCC.
- EEO paperwork requirements are too complicated and the typical problem of retaining good people in small markets is even greater with talented minority employees.
- Postcard renewal is not very effective because records have to be kept anyway. The view generally was it is better than no change, but not by much.
- Financial reporting was questioned as to why it was required at all.
- Fairness rules were generally supported, primarily on the theory that it would protect the industry against a few irresponsible operators.
- Program log requirements were viewed as too detailed. One suggestion was a 52 week composite; another was that program reporting should only be at license renewal time.

Most of these issues are common to the industry and have been raised before by broadcasters. Indications of possible attention to these matters in the new Administration should find wide support among small market broadcasters.

Ratings service. Because the markets are small, concern focuses on the samples used in these markets. Not unfrequently no more than a few homes are included in the sample in a given county, and the confidence limits in the survey results likely are very large. In low population density areas, such as counties surrounding Idaho Falls/Pocatello, Grand Junction and Yakima, this criticism was frequently cited.

WTOV-Steubenville expressed concern about the definition of home counties. It claims being number one in certain counties but does not adequately get credit for them because of the combined ratings of the Pittsburgh stations.

Bangor and Cadillac/Traverse City find it difficult to get full value for their audience because the substantial Canadian audience is not counted.

Madison stations expressed concern regarding the lack of measurement studies on college campus viewing. The University of Wisconsin with 40,000 students represents a sizable portion of the television audience.

The use of a satellite by one station and not by another in the same market necessarily results in a large margin for the station with a satellite in ADI totals, disproportionate to relative strength in the basic signal area. Depending on whether the station had a satellite, this was viewed as a fault or a desirable aspect of the ratings measurements.

A similar problem is encountered by a UHF in a market with one or two V's. The ratings give an impression of station weakness that does not necessarily hold true if the area of survey is within the UHF rather than VHF coverage area.

Because it is unlikely that national ratings methodologies will be modified, small market operators should invest in specially prepared material to better tell "their story." Increased sample size in rural counties, however, should be considered by the ratings services.

Community role and competing media. Television generally was viewed as being secondary to newspapers in terms of importance in community affairs. There was not much dissatisfaction with this among those interviewed. Television was seen as an entertainment medium first and a community communication medium second. Radio seldom was considered important. And some of those interviewed were even surprised when cable was considered in the list of community media. In a few communities there was some interest and knowledge of the possibilities of locally orginated cable programming.

Inexperienced news staffs not knowledgeable about community affairs, too little time for presentation of an issue, a concentration on "headline" material and poorly researched editorials were listed as concerns in terms of local news coverage.

For there to be a major change in community role, creative and financial capability to produce entertaining and informative local programming is required. New equipment and adaptation of creative sophistication in informative local programming shown in "news magazines" and some network programming will be required. Given the resources available and the difficulty of achieving ambitious creative goals, this will be a slowly evolving area.

Summary

Each market has unique aspects that must be considered in operating a station. Visits to the fifteen markets were enlightening, expanding the concept embodied in "small market" to a richer understanding of factors at play. The case studies, in turn, helped in the econometric modeling effort.

It is hoped that the anecdotal and generalized information presented in this section will aid managers in their operations and policy makers in their consideration of the impacts of policy on small market stations.

SECTION II. A MODEL OF TELEVISION STATION ECONOMICS IN 100-PLUS MARKETS

This section describes an econometric model designed to determine which factors most importantly affect audiences, revenues and profits for small market stations. The model can be used by station management in estimating effects of changing market conditions (e.g., population growth or decline, addition of a station to the market, increased cable penetration) and possible results of increasing or decreasing expenditures in selected categories (e.g., programming, selling, technical). It also can be used in assessing potential impact on stations of certain proposed regulatory actions where those actions would effect variables in the model. The model described in this section is one which the authors believe presents a pragmatic description of the economics of small market television that closely parallels the results of the case studies described in Section I.

Limitations

Data used were from the NAB annual financial survey of television stations for 1976 and 1979. As discussed in the Appendix, these data do not form a complete set of financial information, leading to the possibility of a biased set.

It had been anticipated that FCC data would be available, providing a complete set, but no agreement was reached with the FCC on access to these data. For future policy applications, it would be desirable to extend the work provided herein by using a complete set of data.

Confidentiality

No individual station data were withdrawn from the NAB computer tapes. BBC prepared tapes with related market variables, merged these tapes with the NAB data and from the merged data base conducted the necessary statistical analyses. Complete confidentiality of station-specific data was maintained.

Background

A number of studies have been conducted to analyze television station audiences and revenues. However, none of these studies has focused on television station operations in 100-plus television markets. Because circumstances of

operating in small markets differ in many respects from larger market situations, a specific analysis of small market economics was deemed desirable.

The specific problem dealt with in this analysis was to develop and test a model capable of describing the relationships existing between small market station costs, audiences, revenues and profits. Several past studies, most particularly those by Park, Johnson and Fishman (1976) and Besen (1976), were helpful to this process. All of the related studies are briefly reviewed in Appendix D.

Approach

Two cross-sectional financial data sets were obtained from the National Association of Broadcasters (NAB)--1976 data and 1979 data. Ordinary least squares multiple regressions were used to analyze the data. Ninety-eight small market stations (Markets 101-212) were examined from 1976 and 120 from 1979.(1)

Lack of access to the FCC data base resulted in inability to use several key variables in the formulation:

- average program costs incurred by competing network VHF stations and by network UHF stations in a market.
- average sales expenditures of competing stations.
- average general and administrative costs of market competitors.

These variables provide a measure of the intensity of competition in a market, and they could be important factors in the model. The limitation caused by their exclusion should be kept in mind when applying the model.

In addition, the NAB sample is incomplete. Inspection of Tables 4 and 5 provides insight into the representativeness of the opportunity samples of small market stations obtained from NAB. The 1979 sample appears to be more representative of all small market stations than the 1976 sample. However, even the 1976 sample appears to be fairly evenly distributed within the market categories provided. The key problem with the 1976 sample appears to be that prosperous stations were more likely to respond than less profitable ones. The 1979 data do not appear to suffer from this problem (Table 5), and the remainder of this report focuses on the 1979 results.

TABLE 4. NUMBER OF MARKETS REPRESENTED IN EACH SAMPLE YEAR
NAB DATA BASE

	Year	
Market Size	1976	1979
101-110	10	10
111-120	5	9
121-130	9	8
131-140	7	10
141-150	9	6
151-160	8	8
161-175	7	8
176-211	15	21
Number of Total Markets With Responding Stations	70	80

TABLE 5. UHF RESPONSE AND AVERAGE QUARTER HOUR AUDIENCE 9 AM-MIDNIGHT COMPARISONS BETWEEN RESPONDING AND NONRESPONDING STATIONS

A. UHF Response Within Markets with Responding Stations	
1976	
Percent of responding stations that are UHF	17%
Percent of nonresponding stations that are UHF	34%
1979	
Percent of responding stations that are UHF	31%
Percent of nonresponding stations that are UHF	28%
B. Average Quarter Hour Audience Comparisons Within Markets with Responding Stations	
1976	
$\bar{x}$ Respondents	16,800
$\bar{x}$ Nonrespondents	13,693
1979	
$\bar{x}$ Respondents	16,126
$\bar{x}$ Nonrespondents	15,970

Variables. Thirty-five variables were initially analyzed. They included: (a) station specific data (e.g., VHF or UHF, various expense categories, type of ownership), (b) market variables generally assumed to be directly related to station performance (e.g., number of television households in the market, number of competing VHF and UHF stations), and (c) market variables describing the demographics and economic health of the area (e.g., ADI total retail sales, a population growth index, bank deposits).

A number of these variables were eliminated because they were insignificant in explaining audience and revenues. An example is in the category describing economic health of an area with variables such as population growth. It had been expected that these would be important. Yet, at about the same time initial modeling results were obtained, the case studies also were establishing the same fact--market economic health does not appear to be a significant determinant of station prosperity. Successful stations were found in both economically stagnant and in booming markets, and, conversely, struggling operations were found in markets at both extremes of market economic health.

This somewhat surprising result suggests that variables under control of station management and dependent on market size are more important as determinants of station prosperity. This does not imply that station viability is unrelated to overall economic conditions. Revenue certainly is directly affected by economic conditions. But, in a given year, the variation in revenue across stations is not significantly affected by variations in market prosperity and growth. Other factors are more important in explaining variations among stations.

A few variables were dropped because they were collinear with other predictor variables, that is, the variables were closely related to other variables in the model making it difficult to separate the effects of one variable from the other. In developing a model, selection generally is made from among collinear variables of those to be retained. This is discussed in Appendix D.

Of the original 35 variables, 14 were retained. The selection is not unique--alternative formulations could use a somewhat different mix of variables. However, after analyzing a number of alternative formulations, the selected mix, with the data base used, appears to provide the most accurate estimation of the variables modeled (audience & revenue), with the effect of terms in the equation corresponding closely to what theory would suggest. The following discussion is of the final results of the modeling process.

The model.(2) A number of different approaches were used in developing a small market model. The first approach was to estimate individual revenue and cost models. However, the results of this process were not satisfactory due to lower than expected explanation of variation in the dependent variables (measured statistically by a factor called "R^2"), collinearity problems and coefficient signs that ran counter to expectations.

Consequently, a recursive model(3) was developed based on the theory that if station management decides to increase technical and/or program expense (assuming the money is "well-spent") such a decision would increase expected audience. Likewise, this increase in expected audience would cause the station's revenue to increase. Increased selling efforts also can be expected to increase revenues.

Selection of this formulation was based, to a large extent, on the results of the case study work. In the case studies, a number of instances were observed where conscious decisions by management to spend or not to spend had a direct effect on audience and ultimately revenues. As discussed in Section I, these "turnarounds," for good or bad, were caused by management decisions--e.g., a group owner in danger of losing a license cuts back sharply in all expenditure categories and audience then declines; or a new owner picks up a struggling VHF in a three station market, substantially increases programming and selling efforts, and shows a strong increase in share and revenue within two years.

Theoretically, it can be argued that cost is an endogenous variable (that is, essentially controlled by factors inherent in the operation rather than set by management direction or, more technically, "jointly dependent variables simultaneously determined"). Indeed certain minimum levels of spending are required just to be on the air. But there can be substantial variability of what is spent in a given market, and observations in the case studies suggest that variability most often results from management decisions and that these decisions have a major impact on station success.

The sequence implied in this process suggests the following recursive model.

(1)	Average Quarter Audience 9 am-Midnight	DEPENDS ON	(Station signal type, technical expense, program expense, number of networks VHF's with which the station competes, number of network UHF's with which the station competes, number of ADI TV households in the market, ADI cable penetration, and average program expense of competing VHF's and UHF's in the market)

(2) Net Broadcast Revenue — DEPENDS ON — (Number of stations in market, average quarter hour audience 9 am-midnight, selling expense, general and administrative expense, average selling expense of competing stations and average general and administrative expense of competing stations in the market.)

This modeling approach worked very well. As noted earlier, however, the lack of a complete data base prevented inclusion of the variables describing expenditures of competing market stations. Theoretically, these variables should be important.

All of the predictor variables were related to the dependent variable in the expected manner and the R^2's were very satisfactory (see Appendix D). The next section explains how to use the model to estimate station audience, revenue and profitability.

Utilization of the Model for Pragmatic Purposes

Because the small market model provides for the average interrelationship among station expenditures, station audience and ultimately station revenue, it should prove to be a useful planning tool. Specifically, our results provide: a) a direct estimate of which variables are "most" important in determining station audience levels and net broadcast revenue and b) an indirect estimate of variable impact on profitability.

Both equations in the small market model are in double log form. The equations for 1979 are:(4)

(3) ln (Av. Quarter Aud. 9 am-Midnight/1000) = -7.720 + .299 VHF + .106 ln(TECH EXP) + .560 ln(PROG EXP) -.233 ln(1+NCNV) - .050 ln(1+NCNU) + .405 ln(ADI TVHH/1,000) -.068 ln (CABLE PEN x 100)

(4) ln(Net Broadcast Revenue) = 7.256 + .180 D1 + .068 D2 + .642 ln(PREDICTED AUD/1,000) +.320 ln(SELL EXP) + .116 ln(G&A EXP).

The variables listed in equations (3) and (4) are identical to those listed in equations (1) and (2) except for the necessary exclusion of those variables previously mentioned for which data were unavailable. The abbreviations can be interpreted by reference to (1) and (2) or to Appendix D. For example, NCNV stands for "number of competing network VHF's."

The only variables which require some discussion are VHF, D1 and D2. Each of these are categorical variables. For example, if a station is operating in a market with two television stations, D2 equals one (D1 equals zero) and D2's coefficient helps to estimate additional revenue that would accrue to such a station relative to a three or more station market, all other things equal. If a station operates in a one station market, D1 equals one (D2 equals zero) and D1's coefficient comes into play. If a station operates in a market with three or more stations both D1 and D2 equal zero, so neither coefficient affects station revenue.

The equations are statistical representations of a station's performance based on deriving an equation that "best" fits the data analyzed. In a two dimensional situation (one independent variable), this can be depicted by a line drawn through a collection of data points. The line might not pass through any of the data points, but still be a reasonable approximation of a generally linear relationship between the dependent and independent variables

The actual value for a station will also vary above or below the estimated value because the collection of variables in a model is only an approximation restricted by the need to use quantifiable variables. For example, the non-quantifiable impacts of management are not included. Outstanding management (beyond actions that can be measured and are in the model such as investment in programming) typically will improve performance above estimates and poor management (e.g., poor community relations) can be expected to decrease performance.

Comparing the model with the data from which it was derived provides a measure of the uncertainty associated with the estimates. As discussed in Appendix D, the model derived in this analysis has the following characteristics:

- the audience model accounts for 75 percent of the observed variation in audience size. The standard error of estimate is 11.4 percent of the sample mean.(5)

- the revenue equation explains 85 percent of the observed variation in revenue and the standard error of estimate is 1.5 percent of the mean sample value for net broadcast revenue.

An example. The only requirements for making use of the small market model are: (a) a calculator capable of taking both natural logarithms (lnx) and natural antilogarithms (e^x), and (b) values (actual or potential) for each of the

variables included in the model. (Worksheets have been provided in the back of this report for convenience.) For purposes of example assume the following:

- A VHF station (VHF = 1) in a three station market (D1 = 0; D2 = 0) with two VHF's and one UHF. The number of competing network V's (NCNV) is one and the number of competing network U's (NCNU) is one.
- Technical expense is $207,700; program expense is $709,000; selling expense totals $282,000; and general and administrative expense equals $799,000.
- Number of TV households in the ADI is 156,000
- Cable penetration is 40 percent.

The task is to provide an estimate of the audience from 9 am to midnight and then to estimate the station's net broadcast revenue. Once this is accomplished an estimate of station profitability can be computed.

Estimating audience. Inserting the provided values into equation (3) yields an estimate of the station's average quarter hour audience from 9 am to midnight.

$$(5)\ \ln\left(\frac{\text{Audience}}{1{,}000}\right) = -7.720 + .299(1) + .106\ \ln(207{,}700) + .560\ \ln(709{,}100) - .233\ \ln(1+1) - .050\ \ln(1+1) + .405\ \ln(156) - .068\ \ln(40).^{(6)}$$

The product of this expression yields a predicted value for the natural log of this station's audience (in 000's) of 3.0192164. Taking the antilog of this, it is estimated that this station's average quarter hour audience from 9 am to midnight equals 20,500.(7)

Estimating net broadcast revenue. A prediction of the station's net broadcast revenue can be obtained as follows:

$$(6)\ \ln(\text{Net Broadcast Revenue}) = 7.256 + .180(0) + .068(0) + .642\ \ln(20.475) + .320\ \ln(282{,}000) + .116\ \ln(799{,}000).$$

The product of this expression yields an estimate of the station's net broadcast revenue, in log form, of 14.79587. Taking the antilog, this station's net broadcast revenue is estimated to be $2,665,400.(8)

Once a revenue estimate is obtained, station profits can be estimated by computing station costs (technical expense + program expense + sales expense + G&A expense) and subtracting. In this case, costs equal $1,998,000, so profits would be $667,000.

As noted earlier, confidence interval limits give an idea of the uncertainty in the estimates. For this baseline case the question is:

- What are the upper and low bounds around the baseline estimates of audience and revenue such that one could be 68 percent certain the true values lie within the limits?

The 68 percent confidence interval for the "baseline" audience estimate has a lower limit of 15,100 and an upper limit of 27,800 (baseline was 20,500). For the revenue estimate, the lower limit is $2,133,900 and the upper limit is $3,329,400 (baseline was $2,665,400) This means that a comparable station which uses the small market model to predict either audience or revenue could be 68 percent certain that the true value of audience or revenue lies within these limits.(9)

Answering "What If" Questions

With "baseline" estimates of station audience and station revenue calculated, the model can be used to answer a number of different "what if" questions. These questions fall into three categories: (a) questions regarding station expenditure policies, (b) questions regarding acquisition and (c) questions regarding changing market conditions. The results from asking a number of these types of questions for the selected "baseline" station are provided in Table 6.

A note of caution is in order at this point. As described above, the model has been derived from 1979 data (and a similar, consistent one from 1976 data). Any attempt to use this model to forecast is subject to several sources of error, including:

- Coefficient values will change from year to year because of factors such as inflation and any absolute (constant dollar) increases or decreases in costs or revenues.
- The relationships might change over time. For example, as pay television and other satellite delivered cable services proliferate, the relationship between average quarter hour audience and cable penetration might change.

- The data used reflect expenditure/audience/revenue relationships as they actually exist in markets. While it is possible to postulate, for example, increasing program expenditures ten-fold, the resultant audience increase indicated by the model is not meaningful because the independent variable has been extended far beyond the range of values used in deriving the model. (This is discussed in more detail in Appendix D.)

- Relationships expressed in the model do not necessarily imply causation.

The model can be used, however, to estimate the impacts of reasonably small increases or decreases in the independent variable values. (In this example, increases/decreases of 25 percent from the base value typically are used.)

The general approach utilized in Table 6 is to modify the value of one variable while leaving all other unrelated variables with their "baseline" values.

Station expenditure policy. The general question posed with respect to station expenditure policy is what happens to estimated audience, estimated revenue and/or estimated profitability if a particular cost category is increased (decreased) by 25 percent from its "baseline" value, leaving all other variable values unchanged?

Inspection of Table 6 suggests that the critical expenditure variable for small market stations to consider with respect to audience is program expense. A 25 percent increase in program expense would cause audience to increase from 20,500 (baseline) to 23,000. This represents an increase of 13.2 percent. This result suggests that: (a) if a small market station wishes to increase its audience, it can do so by spending more on programming, and (b) program costs rise faster on a percentage basis than does audience. As a result, station managers face a situation where program expenditures result in diminishing marginal audience returns.

Spending on programming also flows through having the largest expenditure impact (indirectly) on net broadcast revenue. A 25 percent increase in program spending ultimately causes an 8.4 percent increase in net broadcast revenue and an increase in gross profits of 6.8 percent (Table 6). Therefore, an increase in program expenditures from baseline (all other factors held constant) appears to be an attractive strategy.

TABLE 6. SIMULATION OF SMALL MARKET TV STATION USING 1979 AVERAGE QUARTER HOUR AUDIENCE/NET BROADCAST REVENUE SIMULTANEOUS RECURSIVE MODEL (PERCENT CHANGE FROM BASELINE IN PARENTHESES)

	Predicted Variables			
Case Variation	Predicted Average Quarter Hour Audience	Predicted Net Broadcast Revenue Dollars	Total Cost (Tech. & Prog. & Sales & G&A) Dollars	Profits Dollars
Baseline Case	20,500	2,665,400	1,997,800	667,600
UHF Station	15,200 (-25.8)%	2,200,400 (-17.4)%	1,997,800	202,600 (-69.7)%
Tech Expense (-25%)	19,900 (-3.0)%	2,613,900 (-1.9)%	1,945,875 (-2.6)%	668,000 (+.001)%
Tech Expense (+25%)	21,000 (+2.4)%	2,706,100 (+1.5)%	2,049,725 (+2.6)%	656,400 (-1.7)%
Program Expense (-25%)	17,400 (-14.9)%	2,403,600 (-9.8)%	1,820,525 (-8.9)%	583,100 (-12.7)%
Program Expense (+25%)	23,200 (+13.3)%	2,888,000 (+8.4)%	2,175,075 (+8.9)%	712,900 (+6.8)%
Selling Expense (-25%)	--	2,430,700 (-8.8)%	1,927,300 (-3.5)%	503,400 (-24.6)%
Selling Expense (+25%)	--	2,863,000 (+7.4)%	2,068,300 (+3.5)%	794,700 (+19.0)%
G&A Expense (-25%)	--	2,577,700 (-3.3)%	1,798,050 (-10)%	779,700 (+16.8)%
G&A Expense (+25%)	--	2,735,600 (+2.6)%	2,197,550 (+10)%	538,000 (-19.4)%
Cable Penetration 10%	22,500 (+9.9)%	2,831,900 (+6.2)%	1,997,800	834,100 (+24.9)%
Cable Penetration 70%	19,700 (-3.7)%	2,601,100 (-2.4)%	1,997,800	603,300 (-9.6)%
Two Station All-V Market	21,200 (+3.5)%	2,916,100 (+9.4)%	1,997,800	918,300 (+37.6)%
Two Station Intermixed Market (VHF)	24,100 (+17.6)%	3,164,700 (+18.7)%	1,997,800	1,166,900 (+74.8)%
One Station Market (VHF)	24,900 (+21.7)%	3,618,300 (+35.7)	1,997,800	1,620,500 (+142.7)%

The above finding should be qualified by recalling that among the missing variables in the model are those relating to expenditures by competing stations in the market (this was due to lack of access to a full data base). If one station's strategy of increasing program expenditures is matched (or exceeded) by other stations in the market, then the strategy might not be successful. The model currently does not account for this. (This comment applies to all expenditure categories.)

Selling expense has a large impact (direct) on net broadcast revenues. Inspection of Table 6 reveals that a 25 percent increase in selling expense for the "baseline" station would cause net broadcast revenues to rise by 7.4 percent and profits to rise by 19 percent.

An increase in the other two kinds of station expenditures, technical expense and general and administrative expense, would have a positive effect on net broadcast revenues. However, the increase in net revenues relative to the increase in expenditures would be small.(10) It appears that the "baseline" station is operating with close to the profit maximizing amount of technical expenditure because an increase in technical expense results in lower profits, and a decrease causes profits to increase only slightly. Additionally, this station could be expected to increase profits by decreasing general and administrative expenses since a 25 percent decrease in this type of expense increases profits by 16.8 percent. This suggests that the "baseline" station might be spending too much on G&A.

Our results suggest that:

- Small market broadcasters interested in cost control must exercise caution in the program and sales areas and, in fact, below average spending in these areas quite likely will hurt profitability.
- Any large variation above or below what other similarly situated stations spend on technical aspects of the operation will result in lower profits.
- Stations wishing to economize should concentrate on the general and administrative portions of station operation.

Station acquisition policy. The question posed regarding station acquisition policy in 100-plus television markets is: What kind of competitive market situation and/or what type of station (VHF or UHF) is likely to be most profitable? The key variables to consider in Table 6 are UHF Station, cable penetration, the two station market variables, and the one station market variable.

Obviously, all other things equal, a buyer will be less interested in a UHF property. According to the "baseline" case analysis, a UHF station in a market with two VHF stations will have a 25.8 percent smaller audience. In the model, this smaller audience then translates into 17.4 percent smaller net broadcast revenue and 69.7 percent lower profit.

The cable penetration results suggest that markets with lower cable penetration should be more attractive to a prospective buyer of a small market station, all other things equal. This is because a station operating in an ADI where cable penetration is only 10 percent could be expected to have a 9.9 percent larger audience, 6.2 percent more revenue and 24.9 percent higher profits than the "baseline" station (recall that baseline cable penetration equals 40 percent).

Finally, the figures provided in Table 6 suggest that, all other things equal, a broadcaster would like to face a minimum amount of competition. If there were only two stations operating in the "baseline" market and both were VHF stations, the stations could be expected to have 3.5 percent larger audience, 9.4 percent greater revenue and 37.6 percent higher profits. The figures are even better for a VHF in a two station intermixed market.

Changing market conditions. The small market model can also be used to evaluate possible changes in a station's market situation. For example, what if a VHF station in a previously one station market faces a new VHF competitor?

Assume that the following figures describe the station and market situation: technical expense equals $157,000, program expense equals $274,000, selling expense equals $125,000, general and administrative expense equals $401,000, the number of ADI TV households equals 38,000, and cable penetration equals 70 percent.

Inserting these numbers into equations (3) and (4) yields an estimate of station audience, revenues and profit for the one station presently in the market of 7,700, $1,202,000 and $245,000 respectively. Working through the equations again to account for a new VHF competitor yields a new audience estimate of 6,600, a decrease of 14.3 percent; a new revenue estimate of $969,000, a decrease of 19.4 percent; and a new profitability estimate of $12,000, a decrease of 95.1 percent. Additional questions dealing with changes in market conditions could focus (a) on the impact of market growth (or decline) on station audience, revenue and profit or (b) on the impact of increased cable penetration.

Implications and Conclusions

The major findings of this analysis are:

- Stations wishing to expand their audience can best do so by increasing program expenditures. However, this relationship is characterized by diminishing marginal returns.
- Increases in audience resulting from increased program expenditure have a major impact on station revenues and profitability.
- A station's sales expenditure has a great deal to do with its revenue and profitability.
- Economizing with respect to general and administrative expense is likely to produce the best results when cost controls become necessary. This is because these expenses typically account for 40 percent of all costs and because a decrease in G&A expenses could be expected to have a relatively small impact on net broadcast revenues.
- An increase in market competition leads to a reduction in audience, revenue and profitability.
- VHF stations continue to enjoy a significant advantage over UHF's with respect to audience, revenue, and profitability.
- Cable has a negative impact on small market station audiences, revenues and profits.
- Major variation of a normal station's technical expenditures is likely to result in lower profits.

Further testing of the small market model with a complete set of FCC data would allow for the incorporation of two additional variables in the audience equation--average program expenditure of competing VHF stations and average program expenditure of competing UHF stations. Likewise, two more variables could be added to the revenue equation--average sales expenditure of competing stations and average general and administrative expenditure of competing stations. Additionally, the model could be tested for all stations which operate outside of the top 100 television markets. This would eliminate any estimating problems related to the unrepresentativeness of the NAB opportunity sample of small market stations. Finally, the use of a complete data set using data of several years could improve the model's accuracy and provide insight into any structural changes that might be occuring in 100-plus markets.

A Conceptual Aside

Work done as part of this study, when combined with other related anlayses by BBC, suggests a general conceptual model of station operation. It is presented here in the belief that it might be helpful to station management and in the formulation of future research.

Besen, in Figure 5 of Appendix F of the Park-Johnson-Fishman report, presents conceptual revenue and cost curves for a typical television station. A similar approach drawing on the case study and economic work done in this and other studies suggests a closely related formulation. This is illustrated in Figure 2, with regions defined on the figure corresponding to the numbers below.

The conceptual model describes the following scenario:

(1) Non-competitive. For the weak station (e.g., a poor third in a three station market) expenditures are very low, resulting in small audiences. (In our observations such stations typically invested little in syndicated programming, news operations, ad production, etc., had small, poorly trained sales forces and often delivered a poor signal. The station's low ratings reduce revenues correspondingly.

-- but, in addition, because the station is a poor third choice for an advertiser (and often does not do a good job of ad production and/or has a poor public image), ad sales are often "off the rate card" and percentage of availabilities sold are less than the other stations (in an unsaturated market).

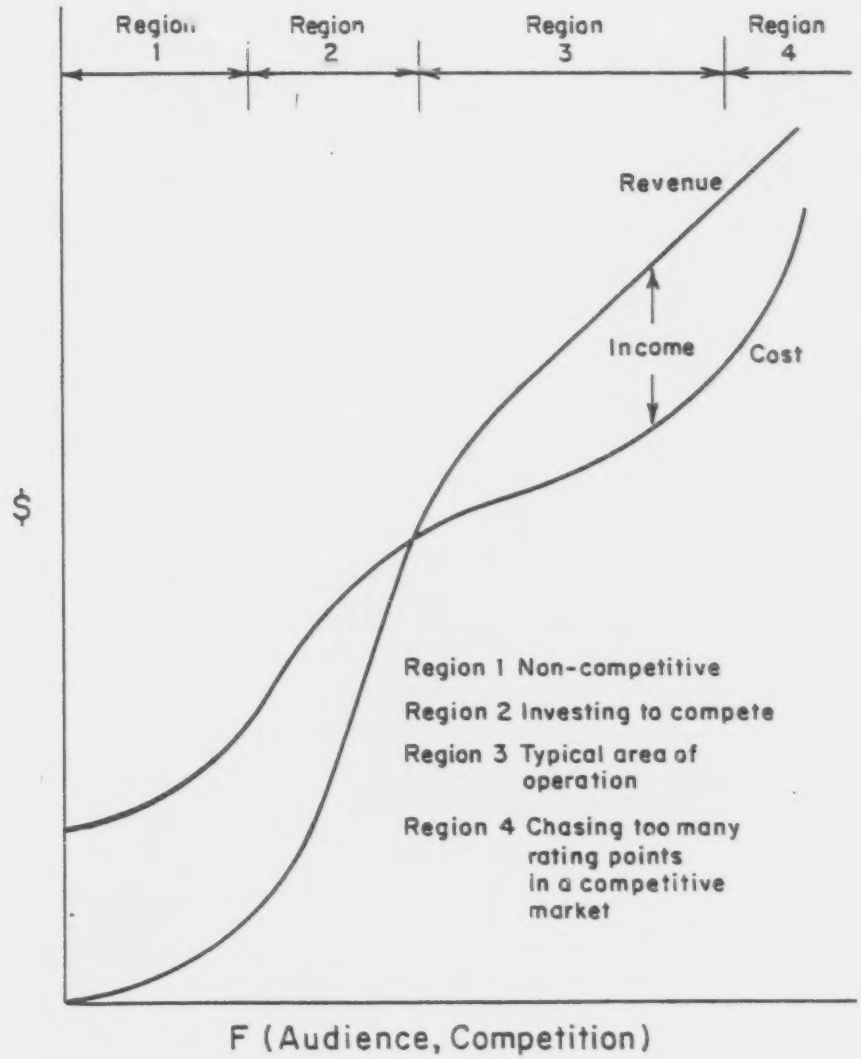
This results in a steep decline in revenues as a function of audience for a weak station.

(2) Investing to compete. To increase audience against strong competition, a weak station typically will have to increase expenditures substantially--in programming, sales and technical categories. Better syndicated programming, ENG equipment, better on-air talent, etc. are elements of this.

(3) Typical operator. As station operations improve, revenues increase more than proportionately because there is less selling off the rate card, a greater percentage of availabilities are sold and the "image" problem for advertisers decreases.

(4) Chasing the rainbow. An attempt to garner a disproportionately large share of the market can reduce net income. Assuming a competitive three station market where all three stations are in the mid-range of the curves on Figure 2, additional rating points get more costly to obtain.

FIGURE 2. STATION ECONOMIC RELATIONSHIPS: A CONCEPTUAL MODEL



In our observations, most small market stations operate in Region 3 of the figure but we have observed operations in Regions 1 and 2--that is, there are marginal operations that will require substantial investment to improve, but most stations are in the near-optimum income range. In small markets, it is unlikely that many stations, if any, would be in Region 4.

Station economics in large markets have not been analyzed, but a similar set of dynamics might exist. Further analysis might serve to establish the validity of this conceptual formulation.

SECTION II. REFERENCES

(1) Four additional stations for which no audience data were available were also included in the 1979 revenue analysis. So N for the revenue analysis was equal to 124.

(2) See Appendix D for a complete discussion of the modeling process. Variable definitions for all of the variables used in the final part of the analysis are also provided there.

(3) A recursive model is a dynamic system which is assumed to work in a unique time sequence. See Dutta (1975) for a good discussion of recursive modeling.

(4) A complete discussion of the model and variable definitions are provided in Appendix D.

(5) The standard error of estimate in simple terms is a statistical measure of how much "scatter" there is in the data above and below the estimate. It is one method of assessing the predictive merit of a model. Another measure is "confidence interval" limits above and below the estimate within which one can state with a specified level of certainty, the true value of the estimated function (audience, revenue) lies. Confidence intervals are used in the "baseline case" example later in this section.

(6) As an example of how to compute this, consider the third term on the right hand side of the equation. The natural log of 207,700 equals 12.24385. Consequently the value in log form is (.106)(12.14385) which equals 1.287.

(7) The antilog of 3.0192164 equals 20.475. Because the audience estimate is in thousands, the station's actual predicted audience equals 20,475, or, as rounded in the text, 20,500.

(8) Actually multiplying out equation (5) as expressed yields a slightly different audience estimate. The difference is due to the fact that the coefficients in equation (5) have been rounded off. The actual computation retains more figures in the coefficients.

(9) The 68 percent confidence intervals for the audience and revenue predictions are asymmetric. The dependent revenue and audience variables are in log-linear form; they are assumed to be normally distributed in this form. When one takes the antilog of a normally distributed variable, an asymmetric log-normal distribution results. Since this is the procedure followed here, our confidence intervals are necessarily asymmetric.

(10) A reminder: both selling and program expenditure variables can be characterized as eventually resulting in diminishing marginal profitability. However, the equation continues to predict increased profits when sales expenditure and program expenditure reach unrealistically high levels. Consequently, if the model is used for simulation/projection purposes expenditure variables should be kept within a relevant range.

Appendix

APPENDIX A

SUMMARY OF SMALL MARKET CHARACTERISTICS

TABLE A-1. SMALL AREA TELEVISION MARKET SAMPLE SELECTION FACTORS

Market*	Economic Environment Category(1)			Ownership Group/Local(2)	Mix of VHF/UHF(3)	Population Density (Persons/ Mile)(4)	Cable & Translators Penetration Percent(5)	Relation to Other Markets(6)	Unused Allo-cations(7)	Single vs. Multi-State(8)
	Population	Income	Bank Deposits							
101 (98) Fargo, North Dakota	2	4	4	KXJB-Group WDAY-Group KTHI-Group	3-V	13.14	22%	68.5%	1V 1U	Multi
102 (100) Waco/Temple	4	3	1	KCCN-Local KWTX-Group	2-V	55.4	61	37.7	1V 2U	Single
103 (104) Colorado Springs/Pueblo	3	3	3	KOAA-Group KKTV-Group KRDO-Local	3-V	20.14	18	17.1	1U 3U	Single
104 (102) Madison	3	3	3	WISC-Group WMTV-Local WKOW-Group	1-V 2-U	85.40	18	17.1	1-U	Multi
105 (103) El Paso	4	2	3	KDBC-Group KTSM-Local KVIA-Group	3-V	31.14	33	72.9	1-V 3U	Multi
106 (114) Monroe/ El Dorado, Louisana	2	4	4	KNOE-Local KTVE-Group KLAA-Local	2-V 1-U	39.14	21	40.0	2-V	Multi
107 (106) Duluth/ Superior	2	3	3	KDAL-Group KBJR-Local WDIO-Group	3-V	18.41	21	68.9	2-V 3-U	Multi
108 (110) Augusta, Georgia	2	3	3	WJBF-Group WROW-Group WATV-Local	2-V 1-U	50.64	22	26.9	1-U	Multi
109 (109) Terre Haute, Indiana	2	3	4	WTWO-Local WTHI-Local WBAK-Local	2-V 1-U	57.29	26	22.7	1-U	Multi
110 (108) Wichita Falls/ Lawton	2	3	3	KAVZ-Group KSWO-Local	2-V	27.15	35	55.8	1-V 3-U	Multi
111 (117) Wheeling/ Steubenville, West Virginia	2	4	3	WTRF-Group WSTV-Group	2-V	105.13	54	8.1	2-U	Multi
112 (119) Salinas/ Monterey	4	2	2	KSBW-Local KNTV-Group KMST-Local	2-V 1-U	93.95	56	6.4	2-V	Single

*Market number listed first is the market rank as listed in Broadcasting Yearbook, 1979 and rank is for the 1978-1979 season. The number in parentheses indicates the market rankings as of January 1, 1981.

TABLE A-1. CONTINUED

Market	Economic Environment Category(1) Population	Income	Bank Deposits	Ownership Group/Local(2)	Mix of VHF/UHF(3)	Population Density (Persons/ Mile)(4)	Cable & Translators Penetration Percent(5)	Relation to Other Markets(6)	Unused Allo-cations(7)	Single v Multi-State(8
113 (107) Joplin/ Pittsburg Missouri	3	3	3	KOAM-Group KODE-Local KTVJ-Group	2-V 1-U	45.43	26%	39.8%	--	Multi
114 (122) Savannah, Georgia	3	3	3	WSAV-Local WTOC-Local WJCL-Local	2-V 1-U	56.20	25	49.0	--	Multi
115 (116) Lafayette, Louisiana	3	4	4	KATC-Group KLFY-Group	2-V	77.72	20	30.6	1-U	Multi
116 (115) Santa Barbara Santa Maria San Luis Obispo	3	2	2	KEYT-Local KSBY-Group KCOY-Local	3-V	74.54	65	2.8	4-U	Single
117 (111) Amarillo	3	3	3	KAMR-Group KVII-Local KFDA-Group KFDW-Local	4-V	11.71	43	42.3	1-V 1-U	Multi
118 (135) Traverse City/ Cadillac, Michigan	4	3	3	WPBN-Group WWTV-Local WGTV-Group	2-V 1-U	29.79	26	20.0	--	Single
119 (118) Montgomery, Alabama	4	2	2	WSFA-Group WCOV-Group WKAB-Group	1-V 2-U	61.62	299	27.4	1-U	Single
120 (120) Beaumont/ Port Arthur, Texas	2	4	3	KJAC-Group KFDM-Group KBMT-Group	3-V	78.80	19	13.1	2-U	Single
121 (113) Columbus, Georgia	2	3	1	WRBL-Local STVM-Group WYEA-Local	2-V 1-U	62.90	30	20.2	3-U	Multi
122 (124) Binghampton,	2	2	2	WBNG-Group WBJA- WICZ-Local	1-V 2-U	89.43	49	20.3	--	Multi
123 (121) Sioux City, Iowa	2	2	3	KTIV-Group KCAU-Group KMEG-Local	2-V 1-U	34.78	8	43.9	1-U	Multi
124 (111) Charleston, South Carolina	3	3	2	WCBD-Group WCIV-Group WLSC-Local	3-V	100.79	13	38.5	--	Single
125 (133) Lubbock, Texas	2	3	4	KCBD-Group KLBK-Group KMCC-Local	2-V 1-U	18.65	28	59.0	1-V 1-V	Multi

*Market number listed first is the market rank as listed in Broadcasting Yearbook, 1979 and rank is for the 1978-1979 season. The number in parentheses indicates the market rankings as of January 1, 1981.

TABLE A-1. CONTINUED

Market	Economic Environment Category(1) Population	Income	Bank Deposits	Ownership Group/Local(2)	Mix of VHF/UHF(3)	Population Density (Persons/ Mile)(4)	Cable & Translators Penetration Percent(5)	Relation to Other Markets(6)	Unused Allo-cations(7)	Single vs. Multi-State(8)
126 (128) La Crosse/ Eau Clair	2	3	3	WKBT-Group WEAU-Group WXOW-Group	1-V 2-U	49.31	37%	35.6%	2-U	Multi
127 (127) Yakima, Washington	3	3	3	KNDO-Local KIMA-Group KAPP-Group	3-V	23.58	37	62.7	--	Multi
128 (125) Eugene, Oregon	3	3	3	KEZI-Local KVAL-Group	2-V	36.37	50	46.7	2-U	Single
129 (131) Wilmington, North Carolina	4	3	3	WWAY-Group WCCT-Local	2-V	73.10	28	23.7	2-U	Multi
130 (130) Wasau/ Rhineland, Wisconsin	3	3	3	WSAU-Group WADW-Group WAEO-Local	3-V	37.89	18	29.4	1-U	Single
131 (145) Topeka, Kansas	2	3	3	WIBW-Group KTSB-Group	1-V 1-U	41.56	31	17.3	2-U	Single
132 (144) Bluefield/ Beckley/ Oak Hill, West Virginia	3	4	4	WOAY-Local WHIS-Group	2-V	75.80	52	22.7	1-U	Single
133 (134) Corpus Christi, Texas	2	4	4	KIII-Local KRIS-Local KZTV-Local KXIX-Local KORO-Group	3-V 2-U	42.59	16	43.4	1-U	Single
134 (132) Rochester/ Mason City/ Austin, Minnesota	2	3	3	KIMT-Group KAAL-Group KTTC-Group	3-V	45.53	13	29.3	2-U	Multi
135 (138) Erie, Pennsylvania	2	3	3	WICU-Group SJET-Group WSEE-Group	1-V 2-U	147.99	29	8.3	1-U	Single
136 (146) Columbus/ Tupelo, Mississippi	3	4	4	WCBI-Group WTWV-Local	2-V	42.90	30	3.0	2-U	Multi
137 (122) Las Vegas	4	2	2	KORK-Group KUUV-Local KLAS-Group KSHO-Local	4-V	2.06	--	83.5	1-U	Single

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TABLE A-1. CONTINUED

Market	Economic Environment Category(1) Population	Income	Bank Deposits	Ownership Group/Local(2)	Mix of VHF/UHF(3)	Population Density (Persons/ Mile)(4)	Cable & Translators Penetration Percent(5)	Relation to Other Markets(6)	Unused Allo-cations(7)	Single vs Multi-State(8)
138 (140) McAllan/ Brownsville	4	4	4	KGBT-Group KRGV-Group	2-V	111.11	27%	98.7%	2-U	Single
139 (129) Columbia/ Jefferson City, Missouri	3	3	3	KOMU-Group KRCG-Group KCBJ-Local	2-V 1-U	42.08	28	46.7	1-U	Single
140 (136) Tallahassee	3	3	3	WCTV-Local WABW-Group WECA-Local	2-U 1-V	46.12	33	31.8	1-V 1-U	Multi
141 (143) Boise, Idaho	4	3	3	KBCI-Group KIVI-Local KTVB-Local	3-V	7.95	6	74.0	1-U	Multi
142 (126) Fort Myers, Florida	4	2	3	WINK-Local WBBH-Local WEVV-Group	1-V 2-U	70.35	52	81.2	1-U	Single
143 (142) Minot/ Bismarck/ Dickenson	2	3	4	KFYR-Group KXMC-Group	2-V	6.08	28	82.3	2-V 2-U	Multi
144 (147) Quincy/ Hannibal, Missouri	2	3	3	WHQA-Group WGEM-Group	2-V	35.28	25	46.7	1-U	Multi
145 (141) Chico/ Redding, California	4	2	2	KRCR-Group KHSL-Local	2-V	1.77	43	11.3	1-V 1-U	Single
146 (148) Bangor, Maine	3	2	2	WLBZ-Group WABI-Group WVII-Group?	3-V	20.89	16	45.3	--	Single
147 (137) Macon, Georgia	3	3	2	WMAZ-Group WCUB-Group	1-V 1-U	81.26	39	43.1	1-U	Single
148 (139) Reno	4	2	2	KTVN-Local KCRL-Local KOLO-Group	3-V	6.94	44	71.3	2-V 2-U	Single
149 (150) Odessa/ Midland	3	4	4	KMID-Group KOSA-Group KMOM-Group	3-V	8.33	53	77.8	4-U	Single
150 (152) Albany, Georgia	2	3	3	WALB-Group	1-V	49.45	33	25.5	2-U	Single

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TABLE A-1. CONTINUED

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151 (156) Utica	1 WVTR-Group	2	2 1-U	WKTV-Group	1-V	103.70	53%	12.2%	1-U	
152 (160) Alexandria, Minnesota	3	4	3	KCMT-Group KNMT-Group	2-V	20.41	27	37.4	1-U	Single
153 (151) Missoula/ Butte	3	3	3	KXLF-Group KECI-Group	2-V	9.41	39	77.4	2-V 4-U	Single
154 (155) Bakersfield, California	3	3	3	KJTV KERO-Group KBAK-Group	3-U	45.39	61	3.1	--	Single
155 (153) Abilene/ Sweetwater	2	4	4	KRBC-Group KTXS-Group	2-V	16.83	52	55.6	3-U	Single
156 (154) Medford, Oregon	4	2	2	KOOI-Group KTVL-Local	2-V	12.03	41	34.9	1-V	Multi
157 (165) Dothan, Alabama	3	3	4	WTVY-Local WOHN-Local	1-V 1-U	59.99	22	18.8	1-U	Multi
158 (159) Tyler, Texas	3	4	4	KLTV-Local	1-V	54.75	49	28.6	2-U	Single
159 (161) Florence South Carolina	3	3	3	WBTW-Group	1-V	91.95	38	17.3	2-U	Multi
160 (158) Elmira, New York	1	2	3	WSYE-Group WENY-Group	2-U	80.85	64	15.1	--	Multi
161 (173) Billings	4	3	3	KTVQ-Group KVLR-Group	2-V	4.65	31	77.2	2-U	Multi
162 (149) Fort Smith, Arkansas	3	3	3	KFSM-Local KLMN-Local KFPW-Group KTVP-Group	2-V 2-U	41.94	52	29.2	1-U	Multi
163 (157) Idaho Falls/ Pocatello, Idaho	4	3	3	KID-Local KPVI-Local KIFI-Group	3-V	9.23	31	38.0	1-U	Multi

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TABLE A-1. CONTINUED

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164 (164) Watertown, NewYork	2	2	2	WWNY-Group	1-V	44.07	42%	17.4%	1-U	Single
165 (163) Clarksburg/ Weston, West Virginia	3	4	4	WOTV-Local WBOY-Local	2-V	50.02	48	5.4	1-U	Single
166 (162) Rapid City	3	3	3	KEVN-Local KOTA-Group	2-V	4.81	34	37.9	2-U	Multi
167 (166) Laurel/ Hattiesburg, Mississippi	3	4	3	WDAM-Local	1-V	47.70	24	25.0	3-U	Single
168 (168) Salisbury, Maryland	3	2	4	WBOG-Group	1-U	92.74	56	10.5	1-U	Multi
169 (176) Meridian, Mississippi	2	4	4	WTOK-Local WHTV-Local	1-V 1-U	31.43	26	17.3	1-U	Multi
170 (172) Anchorage	4	4	4	KCNI-Group KIVA-Group KIMO-Local	2-V 1-U	5.39	--	100.0	1-V	Single
171 (174) Alexandria, Louisiana	1	2	3	KALB-Local	1-V	53.54	38	16.4	2-U	Single
172 (171) Jonesboro, Arkansas	4	3	3	KAIT-Local	1-V	41.04	31	29.6	--	Multi
173 (175) Lake Charles, Louisiana	3	3	4	KPLC-Local	1-V	14.17	35	14.9	1-U	Single
174 (170) Ardmore/ Ada, Oklahoma	3	3	3	KTEN-Local KXII-Group	2-V	24.05	32	9.4	2-U	Single
175 (169) Great Falls	2	2	3	KKTV-Group KFBB-Group	2-V	4.51	37	50.8	2-U	Single
176 (177) Cheyenne	3	3	3	KYCU-Group	1-V	13.22	51	16.3	2-U	Multi
177 (177) Gainesville	4	3	3	WCJB-Group	1-U	53.57	57	32	-	Single

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TABLE A-1. CONTINUED

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178 (180) Marquette, Michigan	2	3	3	WLVC-Group	1-V	23.81	55%	38.0%	1-U	Multi
179 (167) Panama City, Florida	4	3	2	WJHG-Group WMBB-Local	2-V	38.82	25	19.3	2-U	Single
180 (186) Casper/ Riverton	4	4	4	KTWO-Group KWRB-Local	2-V	3.99	56	43.3	2-V	Single
181 (184) St. Joseph, Missouri	2	3	3	KQTV-Group	1-V	43.34	48	6.7	2-V	Single
182 (183) Roswell	3	4	4							
183 (185) Biloxi/ Gulfport/ Pascagoula, Mississippi	3	2	3	WLOX-Group	1-V	155.66	64	12.5	2-U	Multi
184 (181) El Centro/ Yuma	4	1	2	KECC-Group KYEL-Local	2-V	1.17	63	3.4	2-V	Multi
185 (182) Eureka, California	3	3	2	KIEM-Local KVIQ-Local	2-V	25.54	40	33.0	--	Multi
186 (194) Mankato, Minnesota	2	4	3	KEYC-Group	1-V	10.14	43	17.3	1-U	Multi
187 (179) Palm Springs	4	2	3	KMIR-Local KESQ-Group	2-U	84.78	99	1.5	--	Single
188 (187) Grand Junction	4	3	4	KREX-Group	1-V	11.84	40	47.0	1-V 1-U	Single
189 (190) Tuscaloosa, Alabama	3	4	4	WCFT-Group	1-U	97.00	40	10.1	1-U	Single
190 (191) Jackson, Tennessee	3	4	3	WBBJ-Group	1-V	70.58	35	11.0	2-U	Single
191 (189) Anniston, Alabama	3	2	3	WHMA-Local	1-U	189.20	56	9.3	--	Single

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192 (188) Greenwood/ Greenville, Mississippi	1	4	4	WABG-Group	1-V	45.92	38%	10.8%	2-U	Single
193 (192) Lafayette, Indiana	2	3	2	WLFI-Local	1-U	229.40	20	11.1	1-U	Single
194 (193) Lima, Ohio	1	3	3	WLIO-Group	1-U	260.00	66	11.6	2-U	Single
195 (200) Twin Falls, Idaho	4	2	3	KMVT-Local	1-V	14.32	40	45.8	--	Single
196 (196) San Angelo, Texas	3	4	3	KCTV-Group	1-V	12.30	56	52.7	2-V	Single
197 (N.A.) Bellingham, Washington	2	4	4	KVOS-Group	1-V	44.83	--	4.0	1-U	Single
198 (204) Bowling Green, Kentucky	3	4	4	WBKO-Local	1-V	72.16	5	5.9	1-U	
199 (195) Harrisonburg, Virginia	3	3	4	WHSV-Group	1-V	30.84	41	10.3	--	Multi
200 (197) Parkersburg, West Virginia	2	4	3	WTAP-Group	1-U	245.65	71	19.6	1-U	Single
201 (199) Presque Isle, Maine	2	3	2	WAGM-Group	1-V	14.44	41	27.0	--	Single
202 (202) Ottumwa/ Kirksville, Iowa/Missouri	2	3	3	KTVO-Group	1-V	21.91	35	11.0		Multi
203 (200) Zanesville Ohio	2	3	3	WHIZ-Local	1-U	126.27	61	5.0	--	Single
204 (205) Laredo, Texas	4	3	4	KGNS-Group	2-V	22.24	57	13.3	2-U	Single
205 (206) Farmington, New Mexico	4	4	4	KIVA-Local	1-V	13.75	46	31.5	--	Single

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TABLE A-1. CONTINUED

Market	Economic Environment Category(1) Population	Income	Bank Deposits	Ownership Group/Local(2)	Mix of VHF/UHF(3)	Population Density (Persons/ Mile)(4)	Cable & Translators Penetration Percent(5)	Relation to Other Markets(6)	Unused Allo-cations(7)	Single vs. Multi-State(8)
206 (209) Victoria, Texas	3	4	4	KXIX-Local	1-U	70.29	77%	29.7%	1-U	Single
207 (208) Flagstaff	4	2	2	KOAI-Local	1-V	3.87	55	36.0	1-V	Single
208 (211) Selma, Alabama	2	2	3	WSLA-Group	1-V	58.30	35	5.2	1-U	Single
209 (210) North Platte	4	3	2	KNOP-Group	1-V	6.64	25	32.5	--	Single
210 (212) Helena	4	2	1	KTCM-Local	1-V	11.74	48	17.4	1-V	Single
211 (213) Alpena, Michigan	3	3	3	WBKB-Local	1-V	35.00	62	22.6	--	Single
212 (214) Miles City/ Glendive, Montana				KYUS-Local KXGN-Local	2-V	3.46	63	43.2	1-V	Single

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APPENDIX A. REFERENCES

(1) The economic environment indices compare the rate of economic growth within a given small market to the nationwide rate of growth during the period 1970 through 1978. Indices were developed by calculating the percent change (1970-1978) in population, income and bank deposits within the market and dividing by the percent change nationwide during the same period. For example, if the market population grew by 11.29 percent, the index would be 111.29 ÷ 108.15 = 1.029. These relative indices were classified according to four growth categories as outlined below:

Category	Index Interval	Classification
4	1.110 and above	"rapid" growth
3	1.000 to 1.109	"moderate" growth
2	0.925 to 1.000	"stable"
1	less than 0.925	"declining"

Population data by market were obtained from U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, Number of Inhabitants, United States Summary, PC(1)-A1, various pages, and Sales and Marketing Management, 1979 Survey of Buying Power, various pages. Income data were from U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, Volume 60, Number 4, various pages. Bank deposit data are from Federal Deposit Insurance Corporation, Summary of Accounts and Deposits in All Commercial Banks, National Summary, June 30, 1970 and Summary of Deposits in All Commercial and Mutual Savings Banks, June 30, 1978, various pages.

(2) Broadcasting Publications, Inc., Broadcasting Yearbook, 1979, pp. B-85--B-135.

(3) Ibid., pp. B-1--B-75.

(4) U.S. Department of Commerce, Bureau of the Census, op. cit., various pages and City and County Data Book, 1977, "A Statistical Abstract Supplement," various pages.

(5) The Arbitron Company, Arbitron Television Census, Fall 1979, "Household Estimates for the 212 Arbitron ADI Marketing Areas," November 1979.

(6) "Relation to Other Markets" consists of the ratio of the Area of Dominant Influence (ADI) to the Total Survey Area for a given market. Data source is Broadcasting Publications, Inc., Broadcasting Yearbook, 1979, op. cit., various pages.

(7) Broadcasting Publications, Inc., Broadcasting Yearbook, 1979, op. cit., p. B-148.

(8) Ibid., various pages.

APPENDIX B

INTERVIEW GUIDES

Station Operators
Community Leaders/Advertisers
Cable System Managers

INTERVIEW GUIDE FOR SMALL MARKET TELEVISION STATION OPERATORS

1. The Market

   a. How would you characterize your market with regard to age? income? education? occupation? size? growth prospects?
   b. How has your market changed over the last 5 to 10 years?
   c. How has this affected your operation?
   d. (Supplement with market-specific questions based on mix of stations VHF/UHF, etc.).

2. Competition - General

   a. How important is the competition from each of the following sources?

      - Other local network affiliates?
      - Outside large market stations whose signals are imported via translator or cable?
      - Other cable programming (e.g. superstations, ESPN, other syndicated programming)?
      - Pay television?
      - Educational television?
      - Independent television stations?

   b. If there is competition from nearby large markets:

      - How distant is the competing community?
      - Do they make special efforts to penetrate your market?
      - What are their competitive advantages?
      - What are your competitive advantages?
      - What steps, if any, have you taken to attract viewers away from these stations?

   c. What is your market share among the network affiliates operating in this market?
   d. What is the top station in your market?
   e How did it get to be number one?

3. Competition - Cable

   a. How long has cable TV been in this market? Pay TV?
   b. What kinds of impacts have they had on your market share and profitability so far? What kinds of impacts do you expect them to have in the future?
   c. How much of cable impact is related to distant signal importation? Any examples of impact?
   d. Has the lack of syndicated exclusivity hurt you? Any examples?
   e. Is non-duplication protection sufficient?

4. Satellite Operations (if any)

   a. Do you have any satellites?
   b. Do other stations in market have any?
   c. Do satellites carry just your programming or do they carry some local programming? If they do local programming, how many minutes or hours per day?

d. Do you file separate 324's for your satellites? (If so, try to obtain).
e. How many households do the satellites add to your rate card? Are they profitable?

5. Community Role

a. What do you view to be your station's role in the community?
b. How satisfied are you with the job you're doing?
c. How satisfied do you think the local populace is with your performance?
d. Any examples of local programming? Time of day, day of week aired? How many minutes or hours per year of this?

6. Operations

a. What are this station's strengths? Weaknesses?
b. What are the biggest problems or barriers you face in the day to day operation of this station?
c. Number of FTE news staff (including sports and weather)?
Number of FTE sales staff?
Number of FTE technical staff?
Number of FTE total staff?
d. What do you think of station compensation payments from networks? If not satisifed, explain what basis you would prefer.
e. What is the profit trend of this station over the last five years?
f. What factors have caused year to year variations?
g. Do you see your operations changing much over the next several years due to technology changes (e.g., use an earth station, increase ENG activities, do more local production)?
h. Do you anticipate using more syndicated programming?
i. How much do you currently spend per year on syndicated programming?

7. Sales

a. What types of businesses are most likely to advertise with you? Least likely? (probe).
b. Do your promotional efforts tend to focus more on repeat business or new business?
c. What percentage of your availabilities are sold at asking rates?
d. If this is less than 80 percent: What are the obstacles to achieving higher sales?
e. What methods have you found to be most effective in promoting television advertising?
f. How much ad production do you do? Are you satisfied with the quality?

8. Regulatory

a. How much time or money do you estimate your station spends each year satisfying the following regulatory requirements?

- legal
- financial
- program logs
- ascertainment
  - community leader survey
  - general public survey
  - community problem list
  - community program list

- equal opportunity employment
- public interest program form

b. How much of this do you feel is necessary? What would you like to see simplified?

c. Are there any regulatory or legislative changes that would improve your station's ability to better serve your market and operate profitably?

9. Financial

How easily is operating capital borrowed from the local financial community? Capital improvement funds?

10. Miscellaneous

Comments or suggestions?
Historical perspective on TV market development.

INTERVIEW GUIDE FOR SMALL MARKET TELEVISION COMMUNITY LEADERS/ADVERTISERS

What do you believe the role of the local television stations should be? (editorial, information, entertainment, etc.)

What are the major strengths and weaknesses of the local television stations?

How strong is the local T.V. station's sense of community identification? Are they an active force in the community (station - and station ownership or management)?

Do the local stations provide sufficient locally-oriented programming?

How would you rate local television, radio and newspaper in terms of relative media importance in your community?

What recommendations do you have to improve local television service?

Are you aware of cable TV in your community?

What options does cable provide that are not available on broadcast?

Does cable have any impact with respect to community affairs? (Local news, etc.)

What is the technical quality of the cable picture--for local station--for distant station--for satellite-fed programming (e.g., Pay, ESPN, etc.).

Comments or suggestions?

FOR BANKERS AND RETAILERS ONLY
Do you advertise on local stations?

IF YES:
Is this an important part of your advertising budget?

What appeals to you most about using television as an advertising medium?

Is there anything that could make it an even more useful medium?

What are the relative advantages of using TV compared to newspaper and radio?

What are the disadvantages, if any?

Who produces? Satisfied with quality?

Approximately how much per year to you spend on TV advertising? Newspaper? Radio?

Cooperative advertising?

IF NO:
Why not? (cost, coverage, etc.)

How do you advertise?

What would cause you to change from your present advertising medium to television?

INTERVIEW GUIDE FOR CABLE SYSTEM MANAGERS

Background

When was system established?
How many channels? Ever expanded?
How many years left in franchise?

System

Current number of channels (usable)
What is carried?
Number of homes passed?
Number of homes in franchise area?
Number of subscribers - basic? Rate_____
pay? Rate_____
Obtain list of what programming on what channel
Any plans to expand channels on system? If so, how much, when?

Pay

When was pay introduced?
What was penetration rate before introduction of pay?
What is it now? How much of increase due to pay?
Why do you believe most people take cable?
- to get distant signals
- for pay
- for other satellite programming (e.g., ESPN or Madison Square Garden)

Have you done any market studies on this? Can we get a copy?

Impact

Do you believe cable has any impact on local station viewing? Any data?
Do you do any local origination? Describe, quantify if possible.
What kind of job do you believe local stations are doing?
- local programming (news, community affairs)
- network coverage
- signal quality

Promotion

How do you promote system?
Radio
TV
Newspaper
Door-to-door
Other

Do you sell any local advertising? If so, how much?
What is your churn rate (% per month)?

APPENDIX C

CASE STUDY MARKETS
(Market Rank as of January 1, 1981)

MADISON, WISCONSIN (ADI 102)

The eight county Madison, Wisconsin market is served by two UHF (WKOW, WMTV) and one VHF (WISC) commercial stations. ETV station WHA also broadcasts from Madison. Over-the-air broadcast signal reception throughout much of the market is fair, a result of the UHF signals, heavy forestation and two lakes which almost surround the City of Madison.

Economic Base. The Madison ADI economy is based on government, trade and services, manufacturing and agriculture. The important government sector results from the state capital and University of Wisconsin being located in the city. The large student population (40,000) is significant in that it demands more sophisticated programming than is normally found in small markets. (Even so, concern was expressed by station managers regarding the lack of measurement studies on college campus viewing.) ADI population has increased by about one percent annually since 1970 with continued growth of this magnitude forecast for the next decade. Per capita income levels are above the Wisconsin average but slightly below national figures. Approximately 189,000 TV households lived in the ADI in 1981.

Station operations. WKOW (ABC) has broadcast over channel 27 since 1953. It is owned by Liberty Communications, Inc. WKOW broadcasts an extensive schedule of local sports programs, and remains in close competition with the other two stations.

WMTV (NBC), owned by Forward Communications, began broadcasting in 1955. Also a UHF outlet, WMTV, as with the other two stations, broadcasts an active local program schedule and makes extensive use of ENG for news.

WISC (CBS), owned by Morgan Murphy stations, is the only commercial VHF broadcaster. It maintains a slim overall ratings lead and is particularly strong in outlying areas where its signal is stronger than those of its competitors. Technical quality, particularly for production, will be improved with a scheduled move to a new station facility. Unlike the other two stations, WISC does not editorialize. However, the station does produce extensive local news and public affairs programming with substantial amounts of live, on location ENG Broadcasts.

For an intermixed market, the Madison ADI is extremely competitive, and the three commercial stations remain close in audience levels. Extensive investment in plant and equipment is evident at all three stations, and coverage of local news, public affairs, and sports is comprehensive.

Competition. Over-the-air broadcast competition from neighboring markets is limited. ETV station, WHA is relatively strong because of the University community, garnering about a 5 share. Basic cable penetration is presently near 36 percent in Madison, 18 percent for the ADI. Cable impact on local broadcasters is modest.

Regulatory issues. EEO is generally viewed with more concern than other regulatory requirements. Madison broadcasters are split regarding the benefits of ascertainment. The frivolous nature of the public appeals process, program logs, and cable deregulation were noted as particular regulatory problems.

Community views. All three television stations are perceived as being actively involved in the community, both in terms of community affairs and news coverage. The two UHF's generally rated higher in this regard. Newspaper is considered the dominant local medium, followed by television.

In 1979 all three stations agreed to participate in a pilot seminar project sponsored by the Television Information Office designed to "present television positively" at the community level. Results were mixed. The compaign involved a great deal of time and effort on the part of the three stations. It produced good response among community leaders but a limited response from the general public.

WHEELING-STEUBENVILLE (ADI 117)

Two VHF commercial stations (WTRF-Wheeling and WTOV-Steubenville) operate in this two state (West Virginia, Ohio) market. UHF educational station WOVC in Cambridge, Ohio is a minor market factor. Th terrain of the six county market is very hilly causing numerous reception problems. Two UHF allocations remain open.

Economic base. The Wheeling-Steubenville ADI lies in the heart of the industrial Ohio River Valley. Coal mining, steel production and other manufacturing industries dominate the local economy. While these industries remain viable, the ADI as a whole has experienced a stable or declining population base for the past four decades. ADI TV households totaled 158,000 in 1981. Median income levels in the Wheeling-Steubenville ADI are slightly below average compared with the United States and Ohio although above those found in West Virginia.

Station operations. WTRF, on the air since 1953, has historically been the dominant market station. This is a result both of its location in the market's population center and strong local news coverage. WTRF switched affiliation from NBC to CBS in January 1980. The switch initially hurt WTRF ratings as many viewers remained loyal to the NBC network programming picked up by competitor WTOV. This affect is reportedly diminishing. Local programming is considered the station's principal strength; technical equipment was a major weakness which has been corrected recently. WTRF is owned by Forward Communications Corporation.

WTOV, which also went on the air in 1953, was recently purchased by Ziff-Davis Broadcasting Company. Ratings have improved considerably since affiliation was switched from CBS to NBC in early 1980, with much of the audience gain at the expense of the Pittsburgh stations. A major upgrading of production equipment, previously a station weakness, is underway. WTOV local programming was perceived by those interviewed as more regionally oriented than that of WTRF. A live news studio is planned for Wheeling to enhance this regional orientation.

Competition. WTOV and WTRF experience strong comeptition from neighboring Pittsburg (ARB Market 11) stations, some of which can be received over-the-air. Other large nearby markets include Cleveland (ARB Market 9), Columbus (ARB Market 32) and Youngstown (ARB Market 80).

Cable has historically been strong in the Wheeling-Steubenville ADI because of the rugged terrain. Market wide penetration is now approximately 54 percent. Opinion is mixed as to whether cable is a net help (by increasing coverage) or a net hindrance (by diverting viewers) to the two local stations.

Regulatory issues. The two station managers interviewed differed as to their views of FCC regulations: one considered them a major problem, the other a modest concern. Both, however, were very critical of EEO and complained of many difficulties satisfying these requirements in the small market context. In particular, they noted that competent minorities quickly receive attractive offers from major market stations and cannot be retained for long in a smaller market.

Community views. Both WTRF and WTOV are generally well regarded in the community, with the stations and management recognized as active community forces. WTRF was typically seen as the more professional operation although WTOV is improving rapidly following purchase by Ziff-Davis. A local bias exists, with people interviewed tending to prefer the station situated in their area. Television is the dominant local media.

YAKIMA, WASHINGTON (ADI 127)

The Yakima ADI situated in southeastern Washington and northern Idaho, contains three UHF stations (KNDO, KIMA, KAPP). Each primary station operates an S-2 satellite in the Tri-Cities (Richland, Pasco and Kennewick) while KIMA operates a second S-2 satellite in Lewiston, Idaho. One UHF educational station (KYVE) is present. The market terrain is hilly and unforested; population density is low.

Economic base. The Yakima area economy is based on agriculture while that near the Tri-Cities is based on the development of nuclear power. As of January 1980, there were an estimated 145,000 TV households in the ADI. Population and economic growth are occurring at a rapid rate, particularly in the Tri-City area. Per capita income is slightly higher than that in the United States but below the Washington state average.

Station operations. KIMA (CBS) was established as Yakima's first television station in 1953. KIMA had a slight ratings lead over KAPP in 1980 as the most watched local station. Seventy minutes of news are aired daily. Technical expenses are comparatively high because of the operation of three separate broadcast facilities.

KNDO (NBC) was established in 1959. KNDO has recently begun advertising production which is helping its sales efforts. Despite relatively low ratings, KNDO has been profitable over recent years.

KAPP (ABC) Yakima's most recent television station was established in 1970. The station airs extensive syndicated programming; it also has plans to produce a Spanish language program for the area's large Chicano population.

Competition. The Yakima market is largely insulated from over-the-air broadcast competition, although Spokane (ADI 70) is a limited influence to the northeast. Cable is a significant concern to all three stations particularly in the Tri-Cities area. Market cable penetration is 37 percent. The stations recently lost non-duplication protection in Walla Walla because of the significantly viewed rule and they may have to curtail local programming in eastern Washington as a result. The local newspapers are considered major competitors for local advertising revenues.

Regulatory issues. Deregulation of the cable industry appears as the major regulatory concern of Yakima TV broadcasters. The difficulty of hiring qualified minorities in a small market was also noted. Ascertainment is a joint process among the stations. Most FCC requirements are considered burdensome but of at least some benefit to the local station and community.

Community views. Newspaper and television are jointly considered the most important local media, followed by radio. In general, community leaders appear satisfied with the quality of the local TV stations and locally oriented programming. However, the quality limitations of small market operation are recognized and signal quality is considered a problem. The local stations are moderately active in their communities.

WILMINGTON (ADI 131)

The Wilmington market, situated on the Atlantic Coast in southeastern North Carolina, includes two VHF commercial stations--WWAY and WECT. An educational station and two unused UHF allocations are also present. The terrain is generally flat and low-lying with few physical barriers to impede broadcast signal reception.

Economic base. The Wilmington economic base has gradually shifted from agriculture to manufacturing over the past two decades. General Electric and E.I. Dupont de Nemours both have major plants in the area. Population growth has exceeded national averages over the past decade, with 142,000 TV households in the area in 1981. A substantial portion of the population is Black. Per capita income is below both state and national averages. Prospects for continued economic expansion are excellent.

Station operations. WECT (NBC) is owned by the Atlantic Telecasting Corporation. It is the dominant market station, resulting partially from a powerful, well situated transmitter. Modern, sophisticated broadcast and production facilities also characterize this station, including a 2,000 foot transmitter tower which the station has operated with for over 12 years. As with WWAY, a greater than average amount of local, community oriented programming is aired.

WWAY (ABC) has been on the air since 1964. In 1968 it was purchased by Clay Communications Inc., an owner of other broadcast and newspaper properties. WWAY is the second ranked station, partially because of an inadequate broadcast tower which provides significantly less coverage than that of its competitor. WWAY intends to apply for "short spacing" so as to move its transmitter further inland and increase its height.

Competition. Over-the-air broadcast competition is extensive. The advent of "high sticks," or 2,000 foot transmitter towers, in nearby markets has led to intensive competition from Raleigh-Durham (ADI 41), Greenville-Washington-New Bern (ADI 101) and Florence (ADI 161). Several stations in these markets actively seek to penetrate the Wilmington area and have achieved significant viewership in several fringe counties.

Cable is also a major competitive factor. The Wilmington cable system presently has about 70 percent basic penetration within its franchise area and is in the process of upgrading from 12 to 24 channels. Cable penetration in the ADI is 28 percent. The introduction of superstation WTBS three years ago led to a major increase in subscribership.

Regulatory issues. Both station managers report serious problems meeting EEO requirements. The license renewal process in general, and ascertainment in particular, is considered burdensome and a waste of station time and resources.

Community views. Both television stations were viewed as being active and involved in the community. Each provides substantial local programming as well as coverage of news and local events. Criticism centered on the lack of in depth reporting, personnel turnover and poor advertising production.

LUBBOCK, TEXAS (ADI 133)

The Lubbock, Texas ADI includes two commercial VHF (KLBK and KCBD) and one commercial UHF (KAMC) stations. ETV stations KTXT-Lubbock and KENW-Portales, New Mexico are minor market factors. The terrain throughout the survey area is generally flat. KCBD maintains an S-1 satellite in Roswell, New Mexico; KAMC has an S-2 satellite in Clovis, New Mexico.

Economic base. As of January 1981, approximately 138,100 TV households resided in the Lubbock ADI. Population within the city increased by more than 20 percent from 1970 to 1980 while growth in rural areas was more modest. The local economy is dominated by agriculture, particularly cotton, with manufacturing a growing secondary component. Lubbock also serves as the primary trade center for much of west Texas. Unemployment rates and per capita incomes are both slightly below state and national averages. In sum, the Lubbock ADI economy is generally healthy and expanding.

Station operations. KLBK (CBS) has the largest viewer share over the 9 am to midnight time period but was ranked second for news (Nielsen, May 1980). It went on the air in 1952. The Prima Group purchased the station from Grayson Enterprises, Inc. in July 1980. KLBK had been operating without a license for the past six years because of allegations against a sister station in Monahans. New ownership has resulted in new investment in plant and equipment.

KCBD (NBC), on the air since 1953, is the number two rated station 9 am to midnight and number three for news. It is owned by The State-Record Company of Columbia, South Carolina.

KAMC (ABC) went on the air in 1970. It is very strong for a UHF station competing with two VHF outlets over the entire broadcast day. It had the highest share for local news (Nielsen, May 1980). KAMC has gone to considerable trouble to overcome its UHF handicap, focusing on making the programming good enough so that viewers will go to the extra trouble to obtain a good signal. It is the leading producer of commercial spots in the market.

Competition. The Lubbock stations receive only limited over-the-air competition. Neighboring markets are also small--Amarillo (ADI 111), Roswell, New Mexico (ADI 183), and Odessa-Midland (ADI 150)--and Grade B signal overlap is limited.

Basic cable penetration is presently 28 percent marketwide and 45 percent within Lubbock itself. Cable's impact on the viewing of local stations is fairly modest, although concern over its future impact is evident. KAMC supports cable as a means of providing an improved signal to many of its viewers.

Regulatory issues. As noted, KLBK had operated without a license for the past six years and had therefore devoted considerable time and money to regulatory issues. More routine regulatory matters are generally considered a bother by two of the three stations, and an excessive burden by a third. Station personnel interviewed were divided as to whether or not most FCC regulations serve a useful purpose.

Community views. Television is considered the dominant local media followed by newspaper and radio. Persons interviewed distinguished between the three stations as to the quality of their local news and programming. In the opinion of the nonstation personnel interviewed, two of the stations are more actively involved in the community than the third station.

TRAVERSE CITY-CADILLAC (ADI 135)

Two VHF (WPBN-Traverse City and WWTV-Cadillac) and one UHF (WGTV-Traverse City) broadcast in the Traverse City-Cadillac market. They each maintain an S-1 VHF satellite in the northern ADI in either Sault Ste. Marie or Cheboygan. An educational station is located in Mt. Pleasant (WCMU) but is not considered a major market factor. The ADI is geographically extensive, including 20 counties in the northwestern portion of Michigan's lower peninsula and three counties in the eastern portion of the upper peninsula.

Economic base. The Traverse City-Cadillac economic bsae is diverse. For example, both Traverse City and Cadillac experienced substantial economic growth over the past decade while the more northern areas, such as Sault Ste. Marie, were in the midst of economic decline. Total ADI TV households numbered 135,000 as of January 1981. Major industries are manufacturing, tourism and agriculture. Income levels are below state and national averages, while the unemployment rate is comparatively high.

Station operations. WWTV (CBS) began operations in 1954 and has been the dominant market station in both overall ratings and for local news. It was purchased by Wilson Communications in early 1979. WWTV takes more of a regional orientation than the other two stations, maintaining offices in Cadillac, Traverse City and Sault Ste. Marie. News and sales are the top aspects of station operation.

WPBN (NBC) was the second highest rated market station in 1980. It went on the air in September 1954 and is owned by U.S. Tobacco. WPBN tends to focus its news programming on the Traverse City area although a more regional orientation is planned. The acquisition of network programming obtained via a combined off-air and microwave feed, is a significant day to day operating concern.

WGTU (ABC) is handicapped as the only UHF station in the three station market. Its signal coverage area is significantly smaller than that of its two competitors. Local sales and ad production are the station's strength. WGTU airs no regularly scheduled local news.

Competition. Major market broadcast competition comes from Detroit (ADI 7), Grand Rapids-Kalamazoo-Battle Creek (ADI 38) and Flint-Saginaw-Bay City (ADI 52). WKBD-Detroit is considered the principal non-market broadcast competitor because of its coverage of Michigan sports.

Cable penetration is a low 26 percent for the market as a whole and will likely remain at a comparativley low level because of a high percentage of low density rural households in the ADI. Inadequate non-duplication, syndicated exclusivity and distant signal importation protection were each mentioned by one or more stations.

Regulatory issues. Station managers interviewed varied widely as to their opinions regarding FCC regulatory requirements. There was special concern about ascertainment because of the large geographical expanse of the ADI. Legal fees were high for all three stations because of recent sale or attempted sale of the station.

Community views. Community leaders interviewed appear relatively neutral regarding the three stations, with neither strong praise nor condemnation. Some differentation among the three stations was evident. In particular, residents of Cadillac or Traverse City tended to favor the local station.

MACON, GEORGIA (ADI 137)

Macon is a mixed TV market with one VHF (WMAZ) and one UHF (WCWB) station. ETV station WDCO is located in nearby Cochran. A construction permit has been issued to an Atlanta group for the market's remaining UHF allocation. The terrain is gently rolling providing good signal reception throughout the grade B contour of the two commercial stations.

Economic base. Macon is the retail and commercial focal point of the 13 county ADI. The economic base is heavily influenced by Warner Robbins Air Force Base, located 15 miles south of Macon, which is the largest local employer. Other major economic sectors include manufacturing, wholesale and retail trade and services. ADI population growth was in excess of 10 percent over the past decade. Per capita income is below state and national averages. About one third of the population is Black. As of January 1981, 131,000 TV households resided in the ADI.

Station operations. WMAZ (CBS), established in 1953, is owned by Multimedia Broadcasting Company. While group owned, it operates with a high degree of local autonomy. WMAZ is overwhelmingly dominant, particularly in local news. Substantial local programming is produced, including several programs oriented toward the Black community. WMAZ produces most of the local advertising spots it airs and has improved their quality over recent years through upgraded production equipment.

WCWB (NBC), a UHF outlet, went on the air in 1968. Originally locally owned, it was purchased by Morris Network Inc. in 1974. WCWB presents an adequate signal over the populated portions of the ADI although it does not have the same ability as WMAZ to penetrate more outlying rural areas. Local programming is less extensive than at WMAZ, partially due to modest station revenues.

Competition. Strong over-the-air broadcast competition is provided by stations in Atlanta (ADI 16) and Columbus (ADI 113) whose grade B signals can be received in at least parts of the Macon ADI. The ABC affiliates in Columbus and Atlanta are particularly strong.

Cable penetration is about 40 percent marketwide and 60 percent within the city, providing another means of receiving Atlanta and Columbus stations. Both Macon stations expressed concern about the impact of cable on their viewership and financial viability.

Regulatory issues. FCC regulatory requirements were severely criticized by Macon broadcasters. In particular, it is felt that ascertainment is a waste of time and money in that knowledge of the community is inherent in the natural process of operating a local television station. EEO is also a concern, particularly as competent minority staff are heavily recruited by larger market stations.

Community views. Community leaders expressed mixed feelings toward the two local stations. Non-news local programming was criticized as was a "take it or leave it" attitude toward local advertisers.

BANGOR (ADI 148)

Three commercial VHF stations (WABI, WVII, WLBZ) operate in this market. An important factor, not indicated in standard market descriptions, is the substantial Canadian audience reached by the stations. Without the Canadian audience, it is unlikely the market could support three stations. Two of the three stations (WVII, WLBZ) are carried on a number of Canadian cable systems (Canadian systems are limited to carrying two U.S. stations). The ownership of the third station (WABI) also operates a station in Presque Isle, near the Canadian border.

Economic Base. The Bangor area consists of a core area (Bangor, Brewer) and a greater Bangor area extending out approximately 25 miles from the core. This area includes Orono, home of the main campus of the University of Maine. Bangor has primarily a service economy supporting northeast Maine and the maritime provinces of Canada. Forest products is a major base industry in the area and electric component assembly plants provide another relatively new industrial base. Textiles and shoes, which used to be major industrial segments, have decreased in importance, but appear to be stabilizing. The major agricultural crop is potatoes. Population shows moderate growth and the economy is stable, with relatively low per capita income.

Station operations. WABI-TV is the dominant station in the market and one of the original two stations in what for many years had been a two station market. WABI's tower location west of Bangor is an important factor, allowing it to cover the Waterville area. The station's dominance has provided it an attractive network compensation rate. News and public affairs programming are strong.

WLBZ is the other station started in the 1950's, running second overall in the market, but currently first on weekday mornings. Owned by a group broadcaster in Portland, Maine, the station has not shifted its tower west (towards Portland) but does operate a VHF translator in Waterville. Canadian ad sales are an important revenue factor, buoyed by extensive cable carriage in Canada. After going through a period of relatively low capital investment, reflecting an emphasis on short-term profits, the station now is increasing modernization of capital plant.

The third station in the market, WVII, was purchased by its present owner in 1976 and is undergoing major change in technical, program and sales areas. The new owner typically has sought "turnaround" situations. Recent improvement in ratings performance derives both from the new management and its ABC affiliation. The station claims 300,000 homes reached in the maritime provinces of Canada. Burdened by heavy costs of turning around the station, management does plan eventually to expand coverage with translators in Presque Isle and to the west in the Waterville area.

Competition. The closest market is Portland (ADI 74), to the south and west of Bangor, with grade B signal overlap in the Augusta-Waterville area.

Adams-Russell recently purchased a number of small cable systems in the area including the system in the City of Bangor. Originally poorly run 12 channel systems, they now are being upgraded and expanded to 18 channel capacity. Cable penetration in the ADI is a low 16 percent, and approximately 40 percent of homes passed by cable are subscribers. Movies (pay TV) and sports (Boston independent Channel 38) are most in demand. Overall cable impacts are low given the ADI cable penetration rate.

Regulatory issues. Canada's C58 law, which provides no tax deduction for Canadian businesses advertising on U.S. television has hurt sales in Canada. Also non-simultaneous program duplication from Canadian stations has affected audience levels. Repeal of distant signal importation is a major concern, because importation of Boston stations is seen as a serious threat. Although not applicable in 100 plus markets, the stations invest extensively in syndicated programming and believe exclusivity should be provided.

Community views. Overall the stations are viewed as doing a satisfactory job of local coverage, with the two older stations regarded as having the most impact. The newspaper (Bangor Daily News) is considered to be the most important medium. The cable system is not viewed as a factor in community communication but the city manager intends to seek substantial local origination commitments in the upcoming (1981) franchise renewal negotiation.

IDAHO FALLS--POCATELLO (ADI 157)

Idaho Falls-Pocatello, Idaho comprises the smallest three station market in the United States. All three stations are VHF: KID and KIFI in Idaho Falls and KPVI in Pocatello. ETV station KBGL also transmits from Pocatello. Most of the ADI is within the Snake River Valley, which has a broad, flat topography enabling good over-the-air reception.

Economic base. Pocatello and Idaho Falls are Idaho's second and third largest cities respectively. The Pocatello area economy is oriented toward transportation (railroad) and manufacturing. The Idaho Falls economy, by contrast, is based on agriculture and nuclear development. ADI population increased by about 25 percent over the past decade and continued rapid population growth is forecast. Income levels are above state and below national averages. More than half the ADI population is Morman. There were 90,100 TV households in 1979.

Station operations. KID (CBS) was established in 1953 as the first station in the market. In 1980, it was the second ranked station both overall and for news. KID sales and news staffs are split between the main office in Idaho Falls and Pocatello. The station operates a network of 26 translators.

KIFI (NBC), the second Idaho Falls station, leads the market in ratings, both news and network. Established in 1961, it is owned by the Post Company which publishes the Idaho Falls Post Register. KIFI maintains its market position through aggressive news reporting both local and regional and a heavy emphasis on syndicated programming. KIFI introduced ENG in this market in 1975. Eighteen translators are employed and news and sales staffs are maintained in both Pocatello and Idaho Falls.

KPVI (ABC) is the only commercial station in Pocatello. It went on the air in 1974 and is owned by Futura Communication Corporation of Boise. Unlike the regional orientation of the other two market stations, KPVI concentrates only on Pocatello where it claims to be the dominant station. Three translators are used.

Competition. The Pocatello and Idaho Falls stations have little grade B overlap with neighboring markets. However, signals imported from the Salt Lake City (ADI 45) stations via cable or translator represent a substantial competitive influence. Cable penetration for the ADI as a whole is approximately 30 percent and about 41 percent in the metro area. The two Idaho Falls stations each own 25 percent of the Idaho Falls cable system.

Regulatory issues. The three station managers generally believe ascertainment is a waste of time and burdensome, particularly in its present form. Concern was also evident regarding EEO and financial reporting requirements

Community views. The local stations are viewed by the community as doing a good to excellent job, given the size of the market. Concern was expressed, however, regarding inexperienced television reporters and high reporter turnover. All of those interviewed believe the three stations have a strong sense of community identification. No relative ranking among television, newspaper and radio as to media importance could be discerned.

RAPID CITY, SOUTH DAKOTA (ADI 162)

The Rapid City ADI is geographically extensive covering 24 counties in five states (South Dakota, North Dakota, Montana, Wyoming and Nebraska). Two VHF commercial stations (KOTA, KEVN) and three ETV's (KZSD, KBHE and KTNE) broadcast in this market. The use of satellites and translators contributes to generally good reception throughout the varied terrain of the ADI.

Economic base. The Rapid City ADI economic base is dominated by agriculture although government, trade and services are also important components. Ellsworth Air Force Base is the largest single employer. Population growth, averaging about 1.7 percent per year, has been moderate. Per capita income levels are below national averages. As of January 1981, approximately 78,400 TV households resided in the ADI.

Station operations. KOTA (NBC), locally owned by Duhammel Broadcasting Enterprises, began broadcasting in 1955. It operates two S-1 satellites (Lead, South Dakota and Sheridan, Wyoming) and one S-2 satellite (Hay Springs, Nebraska), as well as 14 translators. While remaining the dominant station in the market, its position has been eroded somewhat by the advent of KEVN four years ago. In response, KOTA has upgraded its technical equipment including the addition of ENG capability. Local programming includes two 30 minute newscasts and a half-hour local news magazine.

Locally owned KEVN (ABC) began operations in 1976. It obtained the channel assignment of KRSD which lost its license as a result of technical violations of FCC broadcast standards. While rated second overall, KEVN ratings are increasing steadily and it is almost even with KOTA in news.

Competition. KOTA and KEVN have no commercial broadcast signal overlap within their grade B contours although competition is evident in outlying portions of the ADI from stations in Cheyenne (ADI 177), Casper (ADI 186), Minot-Bismark-Dickinson (ADI 142) and Billings (ADI 173).

Cable television has a modest competitive impact. Cable penetration is about 34 percent market wide and 55 percent within Rapid City itself. One station estimated 18 percent of the market is lost to signals imported from Denver. Much of the market has low population density and cannot be economically cabled.

Regulatory issues. Both stations expressed concern about the time requirements of the ascertainment process which they considered unnecessary in small markets because of the normal interaction between station management and community leaders. EEO requirements are also considered burdensome. It is believed that cable regulation should be increased or broadcast regulation decreased if small market stations are to remain financially viable.

Community views. Local television service is viewed as adequate with substantial improvement evident since KEVN went on the air. Perceived remaining problem areas include shallow local news coverage and poor advertising production quality. Newspaper is the most influential local medium followed by TV and radio.

EL CENTRO-YUMA (ADI 181)

The two county El Centro, California/Yuma, Arizona market is located in the extreme southwestern United States. A VHF station is located in each city (KYEL-Yuma, KECC-El Centro). One VHF allocation remains unused. Both transmitters are on Black Mountain reaching Blythe and Mexicali, Mexico in addition to both cities of license. Over-the-air reception in the market is good although translators are required to reach all ADI households in this sparsely populated market.

Economic base. The El Centro-Yuma ADI economy is based on government, agriculture and tourism. Government is the largest single employer, largely as a result of three major military installations in the area. Both Yuma and Imperial Counties are also among the richest agricultural areas in the United States. ADI population has increased at about two percent annually over the past twenty years, or twice the national average. Income levels are below state and national figures largely as a result of a high percentage of low paid agricultural workers. A large Spanish surnamed population is present.

Station operations. KYEL (NBC/ABC) of Yuma is the dominant market station. It began broadcasting in 1963 and is now owned by Service Broadcasters, Inc. of Hattiesburg, Mississippi. KYEL is in the Mountain Time Zone, KECC-El Centro in the Pacific Time Zone. Because the Pacific prime time feed begins an hour later than the Mountain feed, KYEL gains a two hour prime time advantage over its competitor six months of the year. In the remaining six months (May-October) KYEL has a one hour advantage due to daylight savings time in California. KYEL news and local affairs programming are concentrated more heavily on the Yuma portion of the ADI, although certain news coverage and sales efforts also focus on El Centro. Equipment has recently been upgraded and includes ENG capability.

KECC (CBS), owned by United Broadcasting Stations of Bethesda, Maryland, has been broadcasting from El Centro since 1968. Sale of the station is pending. Because of the impending sale, investment in new plant and equipment has been modest over recent years and numerous equipment shortcomings are evident. Only one 30 minute news broadcast is originated daily plus a five minute early news. The attraction and maintenance of qualified staff is a major concern. Certain picture quality problems also exist.

Competition. Cable penetration is 63 percent in the El Centro-Yuma market and presents significant competition to the local broadcasters. Cable preceded the two broadcast stations into the market and is grandfathered with respect to the importation of distant signals. Popular distant stations are from Phoenix, Los Angeles and Mexicali, Mexico. Over-the-air broadcast competition is nonexistant because of the geographic isolation of El Centro and Yuma.

Regulatory issues. EEO requirements are the dominant local concern. The two stations report difficulties maintaining the number of minority staff necessitated by the high local minority population. In particular, competent minority employees are quickly hired away by larger market stations. Views of the license renewal and ascertainment process were mixed. The frivolous nature of complaints to which the FCC requires stations to respond was noted.

Community views. Each station is perceived as active in its community of license but not in the other. News reporting is considered adequate. Newspapers are the most influential local media, generally followed by radio with television in third position. Certain advertisers expressed reluctance to advertise over television because of fragmented local viewing patterns.

GRAND JUNCTION (ADI 187)

Two VHF stations--KREX and KJCT--operate in the Grand Junction ADI. KREX (CBS-NBC) began broadcasting in 1954; KJCT (ABC) went on the air in late 1979. KREX maintains S-2 satellites in Montrose (KREY) and Durango (KREZ) in addition to 54 translators. KJCT has a less extensive translator network and reaches fewer viewers in the mountainous ADI terrain.

Economic base. The Grand Junction economic base is expanding rapidly with the development of the region's rich energy resources. Considerable population growth is evident, with the number of TV households expanding from 29,700 in 1970 to 44,000 in 1981. Personal income levels are increasing, but lag the state average because of the ADI's predominantly rural orientation.

Station operations. KREX is the dominant station in the Grand Junction ADI. It is locally owned and operated in conjunction with KREX AM and FM which permits a sharing of personnel and certain physical resources. News coverage is considered the station's strength. Most local advertising availabilities are sold and KREX appears financially successful.

KJCT is co-owned with KRDO-Colorado Springs. The two stations work together closely including the carriage of almost identical programming. KJCT experienced serious startup problems but appears to be improving. KJCT's modern advertising production facilities are considered the station's strength. Advertising sales have been a problem, however, because of low ratings.

Competition. Denver (ADI 20) and Albuquerque (ADI 72) are the major large market competitors. The Denver stations attempt to capture Grand Junction viewers by maintaining news bureaus in the city.

Cable television systems are located in most of the communities in the ADI. Approximately 40 percent of market households subscribe with a higher percentage in the major towns. The two Grand Junction TV stations consider nonduplication protection adequate. Some audience fragmentation is evident due to pay and other cable programming but local broadcasters do not view it as a significant concern.

In November 1978, Mesa County (Grand Junction and vicinity) voters approved a tax levy to pay for a county owned translator network to import KOA (NBC), KWGN (Independent) and KRMA (PBS) from Denver. The system should be operational in the next year. Concern centers on technical quality and the proper role of government in such a venture.

Regulatory issues. FCC regulations appear more of an annoyance than a major concern for the two Grand Junction stations. A joint community leader survey has been instituted in conjunction with the local radio stations. This process reduces the level of effort required of any one station and increases the cooperation of many community leaders. EEO appears as the most pressing regulatory concern.

Community views. Both stations are generally viewed in a favorable light. KREX is particularly well thought of and has been recognized as a community leader for decades. Newspaper is universally regarded as the most influential local media.

ANNISTON, ALABAMA (ADI 189)

Anniston is a small, one county (Calhoun) ADI situated in northeastern Alabama. WHMA, a UHF broadcaster, is the sole commercial station. ETV station WCIQ transmits from approximately 20 miles south of Anniston. The mountainous terrain of Calhoun County makes for poor reception of WHMA's UHF signal.

Economic base. Government and manufacturing dominate the Anniston economic base. Two large military installations are located in Calhoun County and together comprise the largest employer. Major manufacturing industries include yarn and thread, textiles and clothiers. As of January 1981, approximately 41,500 TV households resided in the market. The population has increased by more than 10 percent over the past decade and continued population growth is forecast. Per capita income levels are below comparable state and national figures.

Station operations. WHMA, a CBS affiliate, went on the air in 1969. It is co-owned with WHMA-AM-FM by the Anniston Broadcasting Company which is united through joint ownership with the Anniston Star. While WHMA is assigned its own ADI by Arbitron, it is included in the Birmingham DMA by Nielsen. As such, national and regional spot advertisers who rely on Nielsen may be unaware that WHMA serves a separate market.

Competition. Over-the-air broadcast competition from Birmingham (ADI 44), Atlanta (ADI 16) and Huntsville-Decatur-Florence (ADI 87) is extensive. Most significant are VHF's WBRC and WAPI, the ABC and NBC affiliates in Birmingham, whose grade B signals cover Anniston. The Birmingham CBS affiliate (WBMG), by contrast, is a UHF station whose signal does not reach Anniston. It was this market void which led to the establishment of WHMA. Within the Anniston ADI, WHMA outdraws WAPI but loses to WBRC.

Cable is popular because of the mountainous terrain and basic to homes passed penetration exceeds 50 percent. Cable appears to have no net impact on WHMA viewership. While the local cable system does import signals from Atlanta, Birmingham and Huntsville, it also extends WHMA's reach and increases its audience size.

Regulatory issues. FCC regulations are generally viewed as well intentioned but unnecessary. The necessity of the license renewal process in the absence of viewer complaints is questioned.

Community views. WHMA is strongly identified with its community, particularly because it is a locally owned station. It is considered responsive to community needs and does an adequate job of local news coverage. The principal weakness is unsophisticated local programming resulting from low revenues. The newspaper is generally considered the most influential local medium followed by television.

JACKSON, TENNESSEE (ADI 191)

The Jackson market presently includes a single VHF station-WBBJ. An application is pending for UHF Channel 16, also allocated to Jackson. ETV station WLJT broadcasts from nearby Lexington. Terrain is generally flat throughout most of the ADI, presenting no barrier to broadcast signals.

Economic base. The Jackson area economy was historically based on agriculture with the city itself a major west Tennessee trade and service center. An aggressive industrial development campaign over the past decade has added a substantial manufacturing component to the economy. The Jackson ADI population increased more than 10 percent over the last decade, with more rapid growth in and around Jackson. Income levels are below state and national averages, partially because of the ADI's predominantly rural orientation. As of January 1981, there were 40,000 TV households in the ADI.

Station operations. WBBJ, an ABC affiliate, went on the air in March 1955. It is owned by Cy Bahakel Broadcasting. According to both the present station manager and community leaders, the station has experienced serious management problems over recent years. New management was hired in early 1980.

Sales, traffic and bookkeeping are considered WBBJ's principal strengths. Technical equipment and quality constitute the major problem areas. New equipment is on order which will hopefully improve the situation. Local advertising production is modest, considering WBBJ is in a one station market.

Competition. Memphis (ADI 34) and Nashville (ADI 30) provide strong major market competition. Grade B contours of the Memphis stations come through or near Jackson itself and adequate over-the-air signals can be received by many Jackson ADI residents. WREG, the Memphis CBS affiliate, is a particularly strong competitor. WBBJ management welcomes the planned UHF channel for Jackson in the hopes it will expand the ADI by attracting viewers in presently marginal outlying counties.

Cable penetration market wide averages 35 percent, with a 60 percent penetration figure in and around Jackson. WTBS is popular, although most subscribers simply desire better reception of the Memphis or Nashville stations. Non-duplication protection has been a problem for WBBJ.

Regulatory issues. FCC regulations are not a major concern for WBBJ management. This largely results from most requirements being handled directly by Cy Bahakel Broadcasting at the corporate level.

Community views. Community leaders interviewed were generally dissatisfied with the quality of WBBJ programming. Many consider local programming efforts amateurish and unprofessional, especially in comparison to the Memphis and Nashville stations available either over-the-air or via cable. Similarly, the station is not viewed as an active force in the community. Many observers did note, however, that the station has improved under its new management. The Jackson newspaper is accepted as the most influential local medium.

LIMA, OHIO (ADI 193)

The Lima ADI, consisting solely of Allen County, is situated in west-central Ohio. WLIO (Channel 35) is the only commercial station presently on the air; a Christian broadcast group has applied for one of the two remaining UHF allocations.

Economic base. The Lima ADI contained 35,200 TV households in 1979, a modest increase from 33,000 in 1970. The population base, however, declined slightly over this period. The economy is based on heavy manufacturing including transportation and electric equipment, machinery and fabricated and primary metals. Economic conditions are comparatively stable; income levels exceed state and national averages. Lima itself serves as a retail trade area for the surrounding rural counties.

Station operations. WLIO went on the air in March 1953. Since 1972, it has been owned 75 percent by the Toledo Blade Company and 25 percent by Midwestern Broadcasting. WLIO is primarily affiliated with NBC although it also carries some ABC programming.

Most local availabilities are sold and the station does the majority of local advertising production. Local news is considered the station's strongest operational feature; attracting and maintaining qualified personnel is a significant operational concern.

Competition. Neighboring top 100 TV markets include Columbus (ADI 32), Dayton (ADI 50), Toledo (ADI 55) and Fort Wayne (ADI 94). The significance of these competitive stations is evidenced by the comparativaely low Lima ADI to survey ratio of 11.6.

Basic cable penetration is 82 percent in the city and 66 percent in the ADI as a whole. WLIO management expressed deep concern about the impact of cable, particularly that of distant signal importation.

Prior to the recent FCC decision to deregulate this aspect of cable operations, WLIO was planning to fight a Commission waiver which permitted additional distant signal carriage by a cable system in suburban Lima. Station management expressed the view that recent FCC decisions deregulating cable have effectively overturned the historic localism doctrine.

Regulatory issues. Ascertainment is regarded as a generally valuable process. Regulatory concern centers on the federal governments right to FCC Form 324 financial data and the quota system resulting from EEO requirements.

Community views. WLIO maintains a high community profile and it generally well respected in Lima. The news department received particular praise for its local affairs coverage. Station donation of time and money to such events as the St. Jude telethon and downtown redevelopment were also noted by several observers. Some dissatisfaction among advertisers was evident, focusing on perceived high rates and inadequate service. Newspaper is the most influential local medium, followed by television and radio.

APPENDIX D

TECHNICAL

APPENDIX D

The information provided in this technical appendix focuses on a discussion of the small market model from an empirical perspective. First, a brief review of the relevant literature is provided. Next, the methodological approach, estimating equations and variable definitions employed throughout the study are specified. Discussion of empirical results is provided at the end of the Appendix.

Review of Literature

A number of past studies have been conducted to provide estimates of individual television station audiences and/or revenues. These include: Fisher and Ferrall (1966); Park, Johnson and Fishman (1976); Besen (1976); Noll, Peck and McGowan (1973); and Charles River Associates (1978).

The general findings of the audience studies are:

- Market size has a positive effect on station audience (Fisher-Ferrall, Park-Johnson-Fishman, and Besen).
- UHF stations can be expected to obtain smaller audiences than do VHF, (Park-Johnson-Fishman, Besen, Noll-Peck-McGowan, and Charles River Associates).
- An increase in the number of network competitors in a market reduces audience (Besen and Noll-Peck-McGowan).
- An increase in spending by a station increases its audience (Besen).
- Network affiliates have larger audiences than independents (Besen, Noll-Peck-McGowan).
- An increase in spending by a station's network affiliated competitors causes station audience to decrease (Besen).

The general findings of the revenue studies are:

- An increase in station audience leads to an increase in station revenue (Fisher-Ferrall, Besen, and Charles River Associates).
- An increase in market size results in larger station revenues (Fisher-Ferrall, Park-Johnson-Fishman, and Besen).

- Stations which operate in more prosperous markets tend to earn larger revenues (Besen, Park-Johnson-Fishman, and Charles River Associates).
- VHF stations earn larger revenues than do UHF's.
- stations operating in markets which have fewer competitors earn larger revenues (Park-Johnson-Fishman, and Besen).

The approach utilized in this analysis draws most heavily on Besen's study. The major differences between Besen's approach and the one employed here are:

- Besen focused on all television stations while this analysis examines stations operating outside of the Top 100 television markets.
- Besen treats cost, audience and revenue as endogenous variables within a simultaneous system of equations while we take a simultaneous recursive approach in which cost is treated as an exogenous variable.

Method

Two cross-sectional economic data sets were obtained from the National Association of Broadcasters (NAB)--1976 data and 1979 data. Ninety-eight small market stations were examined from 1976 and 120 from 1979.(1) A simultaneous recursive least squares multiple regression technique was used to analyze the data.(2)

The basic theory underlying the estimating equations and research hypotheses is that a television station's expenditures, audience and revenues are related to each other in a recursive fashion (the relationship works in a unique time sequence). If a TV station increases its program and technical expenditures, this should result in an increase in its expected audience. Such an increase in expected audience along with increases in sales and general and administrative expenditures can then be expected to result in an increase in station revenues. The general form of the recursive model just described is:

(D-1) $\text{Expected Audience}_t = f_1(\text{Program Expenditure}_t, \text{Technical Expenditure}_t)$

(D-2) $\text{Revenue}_t = f_2(\text{Expected Audience}_t, \text{Sales Expenditure}_t, \text{Gen. \& Admin. Exp.}_t)$.

The recursive system provided in D-1 and D-2 constitutes the approach used in estimation.

Four alternative functional forms were tested: linear, semilog 1, semilog 2, and doublelog. Since the doublelog form provided the best fitting equations, doublelog results are the only ones reported here.(3) The simultaneous recursive estimating model used was (excluding those variables as noted in the text for which data were not available):

$$(D\text{-}3) \quad \ln(AUD_i) = a_i + b_1\ln(TECH_i) + b_2\ln(PROGRAM_i) + b_3\ln(TVHH_i) + b_4\ln(CABLEPEN_i) + b_5\ln(NCNV_i + 1) + b_6\ln(NCNU_i + 1) + b_7 VHF_i + u_i, (4)$$

$$(D\text{-}4) \quad \ln(REV_i) = a_i + b_1\ln(\widehat{AUD}_i) + b_2\ln(SALES_i) + b_3\ln(G\&A_i) + b_4 D1_i + b_5 D2_i + e_i.$$

Where:

AUD = The average number of Designated Market Area (DMA) households (in thousands) watching the ith station from 9 am to Midnight during the time period being examined, 1976 and 1979 respectively (A.C. Nielsen, Inc., 1977 and 1979).

REV = The net broadcast revenue earned by the ith station as provided by the National Association of Broadcasters (1976 and 1979). Net broadcast revenue equals total broadcast revenue minus commissions to agencies, representatives and brokers and minus cash discounts. NAB collects data which is comparable to FCC Form 324 financial information.

and where:

TECH = The total technical expense incurred by the ith station as provided by NAB. This includes the station's technical payroll expense and all other technical expenses.

PROGRAM = The total program expense incurred by the ith station as provided by NAB. Program expense includes payroll for talent, payroll for all other program employees, rental and amortization of film and tape, records and transcriptions, cost of outside news services, music license fees, other performance and program rights, and all other program expenses.

TVHH = The number of households (in thousands) capable of receiving television signals in the ith station's Area of Dominant Influence (ADI). An ADI is comparable to a DMA. The former term refers to Arbitron's basic television market, while the latter refers to A.C. Nielsen's. (Standard Rate and Data Service: Spot Television Rates and Data, 1976 and 1979).

CABLEPEN = ADI cable penetration (percentage of households with cable TV) times 100 (TV Factbook, 1976 and 1979).

NCNV = The number of same-market network affiliated VHF stations with which the ith station competes. (TV Factbook, 1976 and 1979).

NCNU = The number of same-market network affiliated UHF stations with which the ith station competes (TV Factbook, 1976 and 1979).

VHF = A dummy variable with a value of 1 if a TV station is a VHF station, 0 otherwise. (TV Factbook, 1976 and 1979).

$\widehat{AUD}$ = The predicted value of the average number of DMA households (in thousands) watching the ith station from 9 am to Midnight. Predicted values are obtained from D-3 and inserted into D-4.(5)

SALES = The total selling expense incurred by the ith station as provided by NAB. This includes the station's selling payroll and all other selling expenses.

G&A = The total general and administrative expense incurred by the ith station as provided by NAB. General and administrative expense includes: general and administrative payroll, depreciation and amortization, interest, allocated costs of management from home office or affiliate(s), and all other general and administrative expenses.

D1 = A dummy variable with a value of 1 if a TV station is the only television station licensed to an ADI, 0 otherwise. (TV Factbook, 1976 and 1979).

D2 = A dummy variable with a value of 1 if a TV station operates in a two station television market, 0 otherwise.

u_i and e_i are random error terms.(6)

Audience hypotheses. Technical expense (TECH), program expense (PROGRAM), and market size (TVHH) can all be expected to be positively related to the size of a station's audience.(7) VHF television stations can also be expected to obtain larger audiences, all other things equal, than UHF's.(8) Conversely, an increase in competition within a market is expected to lead to lower audience size all other things equal. This expectation holds whether the competition comes from other television stations in the same market (NCNV and NCNU) or from remote program sources (CABLEPEN).(9)

Revenue hypotheses. All of the predictor variables utilized in the revenue equation should be positively related to station revenue. Sales expenditures (SALES) are incurred in the hope of directly increasing sales revenue.

While the relation between general and administrative expenditures (G&A) and station revenues is not as clearcut, it seems plausible that most general and administrative expenditures are incurred to allow a station to maximize long term profits.(10) An increase in expected audience ($\widehat{AUD}$) can also be expected to result in higher station net broadcast revenue since advertisers typically pay larger gross amounts to purchase access to larger expected audiences.(11) Finally, stations operating in markets with less competition (D1 and D2) should earn larger revenues, all other things equal.(12)

Results

The results of the small market analysis are contained in Table D-1. Most expectations are confirmed by the coefficients found in this Table. The 1976 and 1979 results are generally consistent with each other. The major differences between the coefficients obtained with the 1976 sample and the 1979 sample are: (a) the UHF handicap appears to have been higher in 1976 than in 1979. (b) Increases in program spending seem to have had a larger impact on audience size in 1979 than they did in 1976. (c) Market size effects are somewhat less important in 1979 as compared to 1976. (d) Cable penetration appears to be having less impact on small market station audiences in 1979 than it did in 1976. (e) Stations operating in two station markets seem to be taking better advantage of their less competitive market situation in 1979, as compared to 1976. And (f) audience size appears to be more important and selling expense and general and administrative expense somewhat less important with respect to net broadcast revenues in 1979 than in 1976.

The differences found may reflect changing market conditions. However, the differences could also be due to the fact that the 1976 sample has an underrepresentation of UHF stations (see Table 5) or because February 1977 audience estimates were used. Because the 1979 sample appears to be more representative of all small market television stations (Tables 4 and 5) and since November 1979 audience estimates were used in the 1979 analysis, the balance of the discussion focuses on 1979 results.

The 1979 estimated audience and revenue equations conform to expectations. Program expenditure has the biggest effect on audience size (a one percent increase in program spending causes audience to increase by .56 percent), followed closely by market size (a one percent increase in market size causes audience size to increase by .405 percent). Both of these coefficients along

TABLE D-1. SIMULTANEOUS RECURSIVE MODEL RESULTS, 1976 & 1979 SMALL MARKET TELEVISION STATIONS (t-STATISTICS IN PARENTHESES)

A. Average Quarter Hour Audience (Double log Form)

	Mean	VHF	Technical Expense	Program Expense	NCNV	NCNU	ADI TVHH	ADI Cable Penetration	R^2	SEE[d]	$\frac{See^e}{\bar{x}aud}$
1976	-3.004[c]	.470[c]	.037	.233[c]	-.484[c]	.012	.557[c]	-.112[c]	.62	.325	.119
(N=98)	(-2.38)	(4.82)	(.37)	(2.65)	(-4.02)	(.10)	(5.64)	(-2.49)			
1979	-7.720[c]	.299[c]	.106	.560[c]	-.233[c]	-.050	.405[c]	-.068	.75	.299	.114
(N=120)	(-7.63)	(4.05)	(1.25)	(7.11)	(-2.50)	(-.51)	(5.28)	(-1.18)			

B. Net Broadcast Revenues (Double log Form)

	Mean	D1	D2	Predicted Quarter Hour Audience	Selling Expense	Gen. & Admin. Expenses	R^2	SEE[d]	$\frac{See^e}{\bar{x}rev}$
1976	4.444[c]	.159[b]	-.030	.368[c]	.409[c]	.295[c]	.83	.201	.014
(N=98)	(6.85)	(2.22)	(-.65)	(5.16)	(7.38)	(4.90)			
1979	7.256[c]	.180[c]	.068[a]	.642[c]	.320[c]	.116[b]	.85	.220	.015
(N=124)	(9.98)	(2.97)	(1.44)	(9.08)	(5.88)	(2.05)			

[a] $p < .1$(1-tail test)

[b] $p < .05$(1-tail test)

[c] $p < .01$(1-tail test)

[d] standard error of estimate in logorithmic form. Also called standard deviation of the regression.

[e] Standard error of estimate as a fraction of the sample mean. Also called the coefficient of variation.

with the VHF and NCNV coefficients are significant at the .01 level. Cable penetration also has an almost significant (at the .1 level) but small negative effect on small market station audience size. The R^2 for the audience equation is very acceptable (.75) and the standard error of estimate equals .299.(13) The standard error of estimate is 11.4 percent of the sample mean.

Predicted audience size from 9 am to Midnight has the most influence on a station's net broadcast revenue (a one percent increase in predicted audience leads to a .642 percent increase in net broadcast revenue) followed by selling expenditure (a one percent increase in selling expense causes net broadcast revenue to increase by .32 percent). Both coefficients are significant at the .01 level as is D1 (one station market dummy). The remaining coefficients, D2 (two station market dummy) and general and administrative expense, are also significant at the .1 and .05 levels respectively. The R^2 for the revenue equation is .85 and the standard error of estimate is .22. The standard error of estimate is 1.5 percent of the mean sample value for the log of net broadcast revenue.(14)

Inspection of Table D-1 also suggests that a determinate equilibrium solution exists with respect to the small market model estimated. This is the case since the audience equation implies that technical expense and program expense rise faster than does audience, and because the revenue results suggest that revenue rises more slowly than does audience, selling expense and general and administrative expense.(15)

BROADCASTER WORKSHEET I: ESTIMATING AUDIENCE

Audience Coefficients	X	Broadcaster Variable Values	=	Variable Constribution to Audience Size	Percent Contribution
-7.720	X	[Intercept] 1	=	-7.720	--
.299	X	[VHF = 1, UHF = 0]	=		
.106	X	[Technical Expense] ln (. . . . .)	=		
.560	X	[Program Expense] ln (. . . . .)	=		
-.233	X	[No. of Network V's with which you compete] ln (1 + . . .)	=		
-.050	X	[No. of Network U's with which you compete] ln (1 + . . .)	=		
.405	X	[No. of ADITVHHs in your market] ln (. . . . ./1,000)	=		
-.068	X	[ADI Cable Penetration] ln (. . . . x 100)	=		
		TOTAL ESTIMATED ln(AUDIENCE)	=		100%
Estimated Audience = $e^{\ln(\text{Audience})}$			=	(... x 1,000)	

BROADCASTER WORKSHEET II: ESTIMATING NET BROADCAST REVENUE

Net Broadcast Revenue Coefficients	X	Broadcaster Variable Values	=	Variable Constribution to Audience Size	Percent Contribution
-7.256	X	[Intercept] 1	=	7.256	--
.180	X	[If only station in + Market = 1, 0 Otherwise]	=	_____	_____
.068	X	[If operating in a two station market = 1 0 Otherwise]	=	_____	_____
.642	X	[Estimated Audience from Worksheet I] ln(. . . /1,000)	=	_____	_____
.320	X	[Selling Expense] ln(. . . . .)	=	_____	_____
.116	X	[General & Administrative Expense] ln(. . . . .)	=	_____	_____
TOTAL ESTIMATED ln(NET BROADCAST REVENUE)			=	_____	100%

Estimated Net Broadcast Revenue = $e^{\ln(\text{Net Broadcast Revenue})}$ = $_____

BROADCASTER WORKSHEET III: ESTIMATED STATION PROFITS

1. Estimated Net Broadcast Revenue (See Worksheet II) $_____

2. Estimated Total Cost of Station Operation (Technical Expense & Program Expense + Sales Expense + G&A Expense $(_____)

3. Estimated Profits $_____

APPENDIX D. REFERENCES

(1) See Reference 1 of Section II.

(2) An attempt was made during the early stages of the analysis to estimate reduced form revenue and cost equations directly. However, the results from this approach were disappointing, particularly with respect to the cost equation. The R^2 for the cost equation was lower than expected. Likewise some coefficient signs ran counter to expectation in both the revenue and cost equations. Additionally, since audience needs to be treated as an endogenous variable, some kind of simultaneous approach to estimation was called for.

(3) Another advantage of the doublelog form is that it minimizes heteroscedasticity problems (nonconstant variance of the disturbances). The test used to evaluate the amount of heteroscedasticity left in our doublelog models was the Spearman Correlation Coefficient between the absolute value of the error terms of the models derived and the predictor variables used. (See Johnston, 1972). A small amount of significant negative (liberal) heteroscedasticity is still present in both the audience and revenue regressions. An attempt was made to correct for the remaining heteroscedasticity by dividing the dependent variable and each explanatory variable (in each equation) by the number of ADI TV households in the ith station's market of operation. Unfortunately, no improvement with respect to the amount of heteroscedasticity present resulted. As a consequence, our results are uncorrected for this problem. Since the heteroscedasticity is negative, a bias exists against the null hypotheses and in favor of these results. However, the coefficients reported are still unbiased and consistent.

(4) Network affiliation is also an important variable with respect to audience size. However, no independent stations are contained in the sample so no control for network affiliation is needed.

(5) The predicted value of audience is used to estimate revenue instead of the actual value because it cannot be assumed that the correlation between the error terms of the Revenue and Audience equations is equal to 0. If correlation between the error terms is significant when the actual value of audience is used, simultaneous equation bias will be present leading to biased and inconsistent coefficient estimates. To test this proposition, correlations between the residuals, e_i and u_i, were obtained for both the 1976 and 1979 regressions. The simple correlation between the 1976 residuals was -0.20 (significant at the .05 level). In 1979, the correlation between the residuals was -0.23 (significant at the .01 level). Consequently, the simultaneous recursive approach used in this study appears justified. This approach is also consistent with the fact that advertisers purchase expected audience from broadcasters rather than actual audience.

(6) Twenty-one additional variables were utilized in earlier stages of the analysis. A few were dropped because they were highly collinear with other predictor variables. Most were eliminated because they were totally in

significant with respect to explaining either audience and/or revenue. The additional variables examined include: the number of competing network translators in the market, the number of competing independent translators in the market, ADI market income per household, ADI total retail sales per household, SMSA bank deposits, a population growth index for each market, a per capita income growth index for each market, a per capita bank deposits index for each market, the median school years completed in the ith station's SMSA of operation, the percent of SMSA workers employed in a white collar job, a same-market newspaper-TV combination dummy, a group ownership dummy, a newspaper ownership dummy, a same-market TV-radio combination dummy, an all-VHF market dummy, each station's net weekly circulation, each station's average daily circulation, each station's average quarter hour prime time audience, the penetration of TV sets capable of receiving UHF signals in each station's ADI of operation, the number of ADI TV households per market station in each station's ADI of operation, and the percent of viewing done to stations operating in other ADI's.

(7) See Besen (1976) for support of the expected relationship between station costs and station audience. Our market size expectation is supported by Fisher-Ferrall (1966), Park-Johnson-Fishman (1976) and Besen (1976). All three of these variables should have a diminishing marginal effect on audience size.

(8) See Park-Johnson-Fishman (1976), Besen (1976), Noll-Peck-McGowan (1973) and Charles River Associates (1978) for support of this hypothesis.

(9) See Besen (1976) and Noll-Peck-McGowan (1973).

(10) No previous studies have utilized sales and general and administrative expenditures as predictor variables with respect to net broadcast revenue. One would expect that sales expenditure should have a direct positive effect on station revenues. General and administrative costs, on the other hand, are likely to have a less direct but nonetheless significant effect on revenues since most G&A expenditures focus on revenues rather than audience considerations.

(11) See Besen (1976), Fisher-Ferrall (1966) and Charles River Associates (1978).

(12) See Park-Johnson-Fishman (1976) and Besen (1976).

(13) Park-Johnson-Fishman (1976): p. 206 suggest that the standard error of estimate is a good measure of the predictive merit of a model. The standard error of estimate equals standard deviation of the regression.

(14) This last result compares quite favorably with the standard error of estimates obtained from Park-Johnson-Fishman's analysis (1976): pp. 258-259. Their best revenue estimating equation yielded a standard error of estimate which was 26.4 percent of the mean sample value for broadcast revenue.

(15) See Besen (1976): p. 307.

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